	STATE OF UTAH  DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING  AMENDED REPORT									
APPLI		1. WELL NAME and	NBU 921-35A4CS							
2. TYPE OF WORK  DRILL NEW WELL	REENTER P	&A WELL DEEPE	EN WELL			3. FIELD OR WILD	CAT NATURAL BUTTES			
4. TYPE OF WELL Gas We	ell Coalt	bed Methane Well: NO				5. UNIT or COMMU	INITIZATION AGRE	EMENT NAME		
6. NAME OF OPERATOR  KERF	R-MCGEE OIL &	GAS ONSHORE, L.P.				7. OPERATOR PHO	<b>NE</b> 720 929-6007			
8. ADDRESS OF OPERATOR		Denver, CO, 80217				9. OPERATOR E-M.		darko.com		
10. MINERAL LEASE NUMBER		11. MINERAL OWNE				12. SURFACE OWN				
(FEDERAL, INDIAN, OR STATE) ML 22582		FEDERAL IND	DIAN STATE (	9)	FEE 🔵		IDIAN STATE			
13. NAME OF SURFACE OWNER (if box 12	= 'fee')					14. SURFACE OWN	IER PHONE (if box	12 = 'fee')		
15. ADDRESS OF SURFACE OWNER (if box	12 = 'fee')					16. SURFACE OWN	IER E-MAIL (if box	12 = 'fee')		
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')		18. INTEND TO COM MULTIPLE FORMATI YES (Submit C			ROM NO	19. SLANT  VERTICAL DI	RECTIONAL 📵 H	ORIZONTAL 🗍		
20. LOCATION OF WELL	FC	DOTAGES	QTR-QTR	9	SECTION	TOWNSHIP	RANGE	MERIDIAN		
LOCATION AT SURFACE	524 F	FNL 445 FEL	NENE		35	9.0 S	21.0 E	S		
Top of Uppermost Producing Zone	1079	FNL 494 FEL	NENE 35		35	9.0 S	21.0 E	S		
At Total Depth	1079 1	FNL 494 FEL	NENE		35	9.0 S	21.0 E	S		
21. COUNTY UINTAH		22. DISTANCE TO N	EAREST LEASE LIN	ST LEASE LINE (Feet) 23. NUMBER OF ACRES IN DRILLING UNIT 321						
		25. DISTANCE TO N (Applied For Drilling		AME	POOL	<b>26. PROPOSED DEPTH</b> MD: 9646 TVD: 9587				
27. ELEVATION - GROUND LEVEL		28. BOND NUMBER		29. SOURCE OF DRILLING WATER /				TE ADDITION I		
4490			22013542			WATER RIGHTS AI	PPROVAL NUMBER Permit #43-8496	IF APPLICABLE		
		Αī	TTACHMENTS							
VERIFY THE FOLLOWING	ARE ATTACH	HED IN ACCORDAN	CE WITH THE U	ТАН (	OIL AND (	GAS CONSERVAT	ION GENERAL R	ULES		
WELL PLAT OR MAP PREPARED BY	LICENSED SUF	RVEYOR OR ENGINEER	R COM	IPLET	E DRILLING	G PLAN				
AFFIDAVIT OF STATUS OF SURFACE	OWNER AGRE	EEMENT (IF FEE SURF	ACE) FOR	4 5. I	F OPERATO	R IS OTHER THAN 1	HE LEASE OWNER			
DIRECTIONAL SURVEY PLAN (IF DI	г торо	OGRA	PHICAL MA	Р						
NAME Danielle Piernot TITLE Regulatory Analyst					PHONE 72	20 929-6156				
SIGNATURE DATE 11/18/2010					<b>EMAIL</b> gn	bregulatory@anadark	o.com			
<b>API NUMBER ASSIGNED</b> 43047513400000	-	APPROVAL			Bi	ocyill				
						Permit Manager				

API Well No: 43047513400000 Received: 11/18/2010

Proposed Hole, Casing, and Cement								
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)				
Prod	7.875	4.5	0	9646				
Pipe	Grade	Length	Weight					
	Grade I-80 Buttress	9646	11.6					

API Well No: 43047513400000 Received: 11/18/2010

	Proposed Hole, Casing, and Cement								
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)					
Surf	11	8.625	0	2310					
Pipe	Grade	Length	Weight						
	Grade J-55 LT&C	2310	28.0						

Drilling Program 1 of 12

NBU 921-35A4CS

### Kerr-McGee Oil & Gas Onshore. L.P.

### NBU 921-35A4CS

 Surface:
 524 FNL / 445 FEL
 NENE

 BHL:
 1079 FNL / 494 FEL
 NENE

Section 35 T9S R21E

Unitah County, Utah Mineral Lease: UT ST ML 22582

### **ONSHORE ORDER NO. 1**

### **DRILLING PROGRAM**

### 1. & 2. <u>Estimated Tops of Important Geologic Markers</u>: <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations</u>:

<u>Formation</u>	<u>Depth</u>	<u>Resource</u>
Uinta	0 - Surface	
Green River	1367	
Birds Nest	1686	Water
Mahogany	2064	Water
Wasatch	4652	Gas
Mesaverde	7322	Gas
MVU2	8270	Gas
MVL1	8857	Gas
TVD	9587	
TD	9646	

### 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program

### 4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program

### 5. <u>Drilling Fluids Program:</u>

Please refer to the attached Drilling Program

### 6. <u>Evaluation Program</u>:

Please refer to the attached Drilling Program

NBU 921-35A4CS

Drilling Program 2 of 12

### 7. **Abnormal Conditions:**

Maximum anticipated bottom hole pressure calculated at 9,587' TVD, approximately equals 5,873 psi (calculated at 0.61 psi/foot).

Maximum anticipated surface pressure equals approximately 3,764 psi (bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

### 8. <u>Anticipated Starting Dates:</u>

### 9. Variances:

Please refer to the attached Drilling Program. Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- · Blowout Prevention Equipment (BOPE) requirements;
- · Mud program requirements; and
- · Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

**Drilling Program** 

NBU 921-35A4CS 3 of 12

> The air rig is then mobilized to drill the surface casing hole by drilling a 11 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 8-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

### Variance for Special Drilling Operation (surface equipment placement) Requirements

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie

NBU 921-35A4CS Drilling Program

line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter 4 of 12 productive formations.

### Conclusion

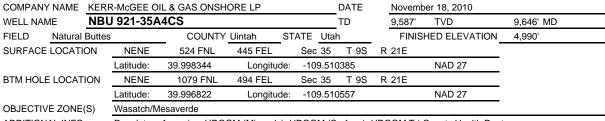
The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

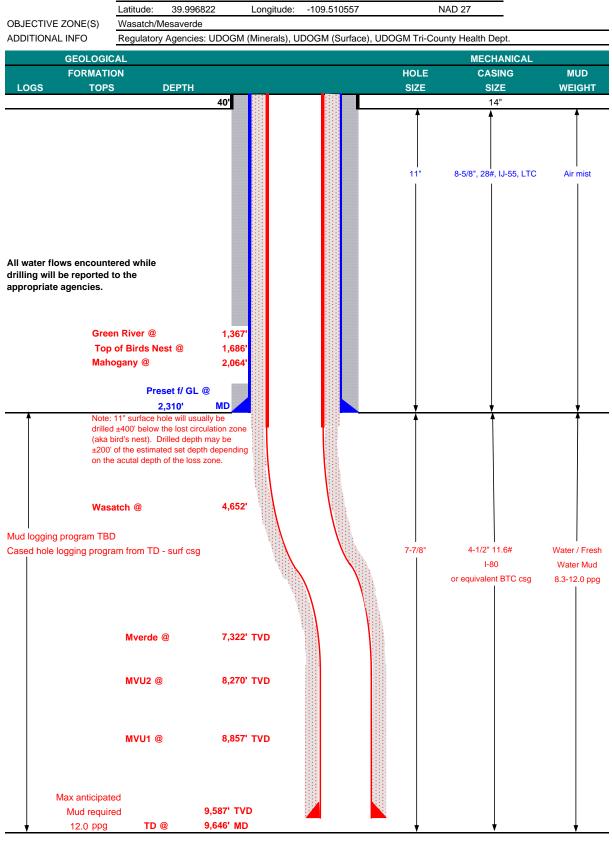
### 10. <u>Other Information:</u>

Please refer to the attached Drilling Program.



## KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM







### **KERR-McGEE OIL & GAS ONSHORE LP**

### **DRILLING PROGRAM**

### **CASING PROGRAM**

									DESIGN FACT	ORS
	SIZE	INT	ERVAL	_	WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0	-40'							
								3,390	1,880	348,000
SURFACE	8-5/8"	0	to	2,310	28.00	IJ-55	LTC	0.87	1.74	5.33
								7,780	6,350	278,000
PRODUCTION	4-1/2"	0	to	9,646	11.60	I-80	BTC	2.01	1.06	2.85

<sup>\*</sup>Burst on suface casing is controlled by fracture gradient as shoe with gas gradient above.

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))
- 2) MASP (Prod Casing) = Pore Pressure at TD (0.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD = 12.0 ppg) 0.22 psi/ft = gradient for partially evac wellbore (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP 3,764 psi

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

(Burst Assumptions: TD = 12.0 ppg) 0.61 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MABHP 5,873 psi

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE LEAD	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
		+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water to surf	face, optio	n 2 will be ເ	ıtilized	
Option 2 LEAD	1,810'	65/35 Poz + 6% Gel + 10 pps gilsonite	170	35%	11.00	3.82
		+ 0.25 pps Flocele + 3% salt BWOW				
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
		+ 0.25 pps flocele				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	4,146'	Premium Lite II +0.25 pps	300	10%	11.00	3.38
		celloflake + 5 pps gilsonite + 10% gel				
		+ 0.5% extender				
TAIL	5,500'	50/50 Poz/G + 10% salt + 2% gel	1,060	10%	14.30	1.31
		+ 0.1% R-3				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

### **FLOAT EQUIPMENT & CENTRALIZERS**

SURFACE Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

**PRODUCTION** 

Float shoe, 1 jt, float collar. No centralizers will be used.

### **ADDITIONAL INFORMATION**

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be	taken at	1,000'	minimum	intervals.

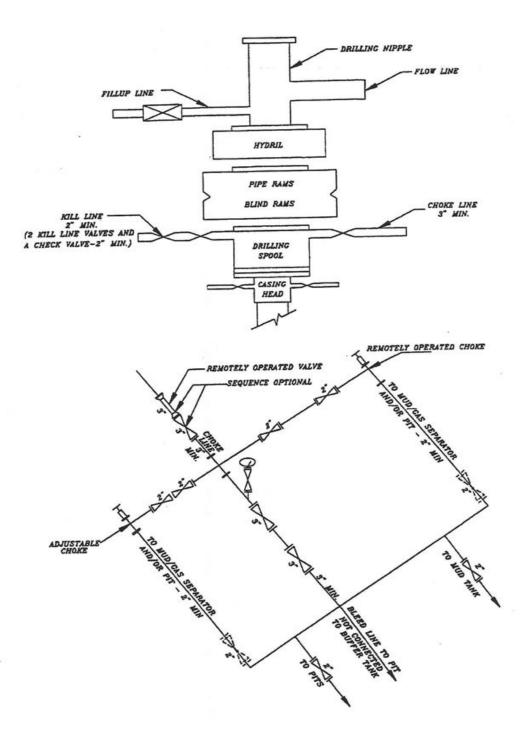
Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

DRILLING ENGINEER:		DATE:	
	John Huycke / Emile Goodwin		
DRILLING SUPERINTENDENT:		DATE:	
	John Merkel / Lovel Young		

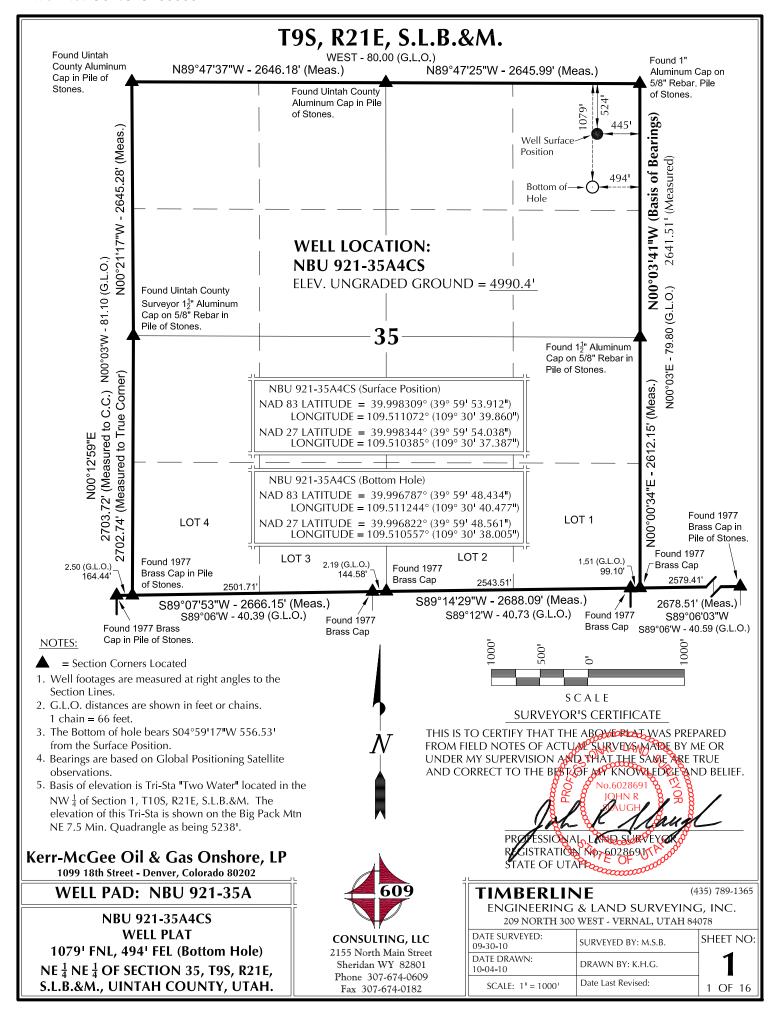
D.F. = 2.33

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

EXHIBIT A NBU 921-35A4CS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK



SURFACE POSITION				BOTTOM HOLE									
WELL NAME	NAI	•		NAD27	CITUDE	F0.074.6F6	NAD83			ITUDE	NAD		E0074656
NBU	<b>LATITUDE</b> 39°59'53.912"	109°30'39.8			<b>GITUDE</b> 0'37.387"	524' FNL	<b>LATIT</b> 39°59'4		LONG 109°30'	40 477"	<b>LATITUDE</b> 39°59'48.561"	LONGITUDE 109°30'38.005"	FOOTAGES 1079' FNL
921-35A4CS	39.998309°	109.511072	99.998344	l° 109.51	10385°	445' FEL	39.9967	787°	109.511	244°	39.996822°	109.510557°	494' FEL
NBU 921-35A1BS	39°59'53.934" 39.998315°	109°30'39.9 109.511107		.	0'37.512" 10420°	522' FNL 455' FEL	39°59'5 39.9988		109°30' 109.511	40.557"	39°59'55.990" 39.998886°	109°30'38.084" 109.510579°	327' FNL 499' FEL
NBU	39°59'53.956"	109.31110/ 109°30'40.1			0'37.637"	520' FNL	39°59'5		109.511 109°30'		39°59'50.212"	109.5105/9° 109°30'55.003"	916' FNL
921-35B4BS NBU	39.998321° 39°59'53.978"	109.511142	° 39.998356	5° 109.51	10455°	464' FEL	39.9972 39°59'5		109.515		39.997281°	109.515279°	1817' FEL
921-35B1BS	39.59.53.9/8° 39.998327°	109°30'40.2 109.511177'			0'37.764" 10490°	518' FNL 474' FEL	39.9990		109°30' 109.515			109°30'54.965" 109.515268°	257' FNL 1813' FEL
CIGE 54D	39°59'54.103"	109°30'40.6	1.1		0'38.136"	505' FNL		'		'	'		•
NBU	39.998362° 39°59'54.102"	109.511280° 109°30'40.8			10593° 0'38.410"	503 FEL 505 FNL							
921-35AT	39.998362°	109.511356				525' FEL							
						- From Surface						- Honer	
NBU NAME	NORTH		WELL NAME NBU	NORTH	EAS	NIDII	NAME	NORT		EAST	NBU NAM		EAST
921-35A4CS	-554.4'	-40.4 II	921-35A1BS	195.4'	-44.4	921-3	5B4BS	-391.	0.	-1352.1	921-35B1BS	265.8	-1338.9
	Bottom of Hole    Sex   Sex												
	$Az = 2$ $573^{\circ}52'1$ $(To f)$	BASIS OF	BEARINGS IS			184.98806°	) 10'			AZ =	77°24'56"E = 102.58444	qo	
BASIS OF BEARINGS IS THE EAST LINE OF THE NE \$\frac{1}{4}\$ OF SECTION 35, T9S, R21E, S.L.B.&M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N000°03'41"W.  Which is taken from GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR N000°03'41"W.  SCALE  Kerr-McGee Oil & Gas Onshore, LP													
	8th Street - De				/		7						•
WFI	L PAD - N	NBU 92	1-35A	٦į		609		TI	MR	ERLI	NF	(4	35) 789-1365
WELL WELLS - NE NBU 92 LOCAT	PAD INTE	RFEREN 4CS, NBU & NBU 92 ION 35, T	CE PLAT 921-35A1B 1-35B1BS 9S, R21E,	S,	2155 No Sherida Phone	ULTING, LL orth Main Stre an WY 82801 307-674-060 07-674-0182	et	DATE 09-30 DATE 10-04	NGIN 209 N SURVEY -10 DRAWN	EERIN IORTH 3 'ED: N:	G & LAND	K.H.G.	

EXISTING GRADE @ CENTER OF WELL PAD = 4990.51 FINISHED GRADE ELEVATION = 4989.81 **CUT SLOPES = VARIES** FILL SLOPES = 1.5:1 **TOTAL WELL PAD AREA = 2.99 ACRES TOTAL DAMAGE AREA = 6.13 ACRES SHRINKAGE FACTOR = 1.10 SWELL FACTOR = 1.00** 

Kerr-McGee Oil & Gas Onshore, LP

1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 921-35A** 

**WELL PAD - LOCATION LAYOUT** NBU 921-35A4CS, NBU 921-35A1BS, NBU 921-35B4BS & NBU 921-35B1BS LOCATED IN SECTION 35, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH

# WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 7,340 C.Y. TOTAL FILL FOR WELL PAD = 525 C.Y. TOPSOIL  $@6^{\circ}$  DEPTH = 941 C.Y. EXCESS MATERIAL = 6.815 C.Y.

# **RESERVE PIT QUANTITIES**

609

CONSULTING, LLC

2155 North Main Street

Sheridan, WY 82801

Phone 307-674-0609 Fax 307-674-0182

**TOTAL CUT FOR RESERVE PIT** +/- 7,410 CY RESERVE PIT CAPACITY (2' OF FREEBOARD) +/- 28,150 BARRELS

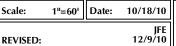
**TIMBERLINE** ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078

(435) 789-1365

EXISTING CONTOURS (2' INTERVAL) PROPOSED CONTOURS (21 INTERVAL) — PPL — PROPOSED PIPELINE — EPL — EXISTING PIPELINE HORIZONTAL | 21 CONTOURS

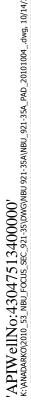
PROPOSED WELL LOCATION

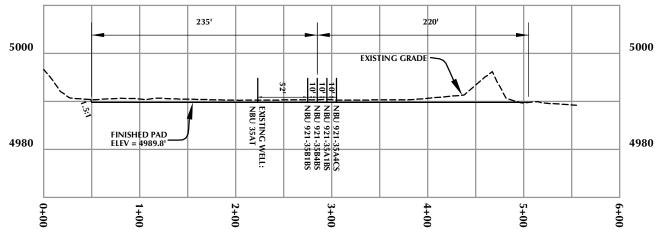
PROPOSED BOTTOM HOLE LOCATION



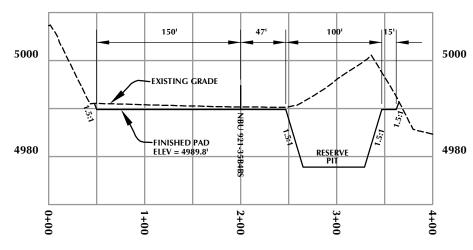
**SHEET NO:** b 6 OF 16

PAD\_20101209.dwg, 12/3/2010 g ::\ANADARKO\2010\_53\_NBU\_FOCUS\_SEC\_921-35\DWG\NBU 921-35A\NBU\_921-35A\_





## **CROSS SECTION A-A'**



# Kerr-McGee Oil & Gas Onshore, LP

1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 921-35A** 

**WELL PAD - CROSS SECTIONS** NBU 921-35A4CS, NBU 921-35A1BS, NBU 921-35B4BS & NBU 921-35B1BS **LOCATED IN SECTION 35, T9S, R21E,** S.L.B.&M., UINTAH COUNTY, UTAH

## **CROSS SECTION B-B'**

NOTE: CROSS SECTION B-B' DEPICTS MAXIMUM RESERVE PIT DEPTH.



**CONSULTING, LLC** 2155 North Main Street Sheridan, WY 82801 Phone 307-674-0609 Fax 307-674-0182



IIMBEKLINE	(435) 789-13
ENGINEERING & LAND SU	RVEYING, INC.
209 NORTH 300 WEST - VERNAL	, UTAH 84078

365	Scale:	1"=100'	Date:	10/15/10	SHEET NO:	
	REVISED	:			7	7 OF 16

'APIWeIINo:43047513400000' k:\anadarko\2010\_53\_\nbu\_Focus\_sec\_921-35\Dwg\

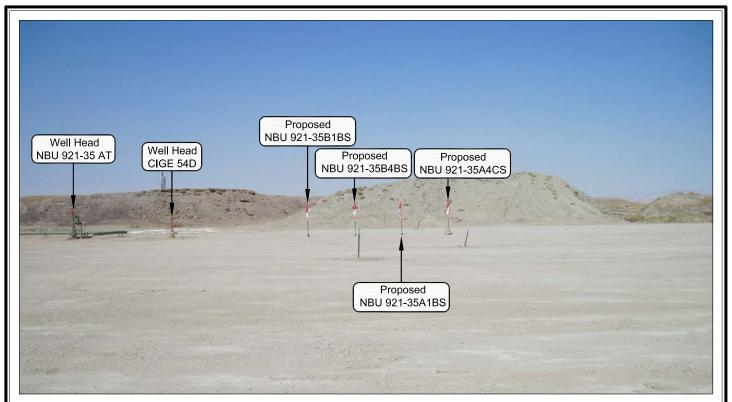


PHOTO VIEW: FROM CORNER 1 TO LOCATION STAKE

**CAMERA ANGLE: NORTHERLY** 



PHOTO VIEW: FROM EXISTING ACCESS ROAD

**CAMERA ANGLE: NORTHWESTERLY** 

### Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

**WELL PAD - NBU 921-35A** 

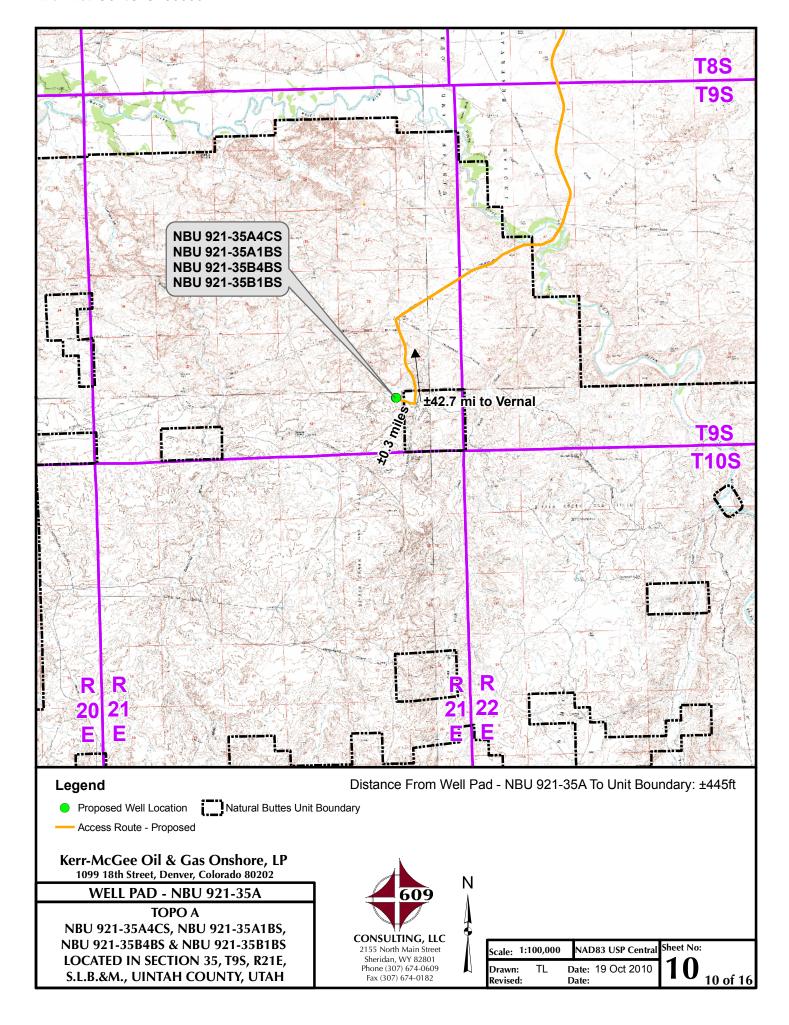
**LOCATION PHOTOS** NBU 921-35A4CS, NBU 921-35A1BS, NBU 921-35B4BS & NBU 921-35B1BS LOCATED IN SECTION 35, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.

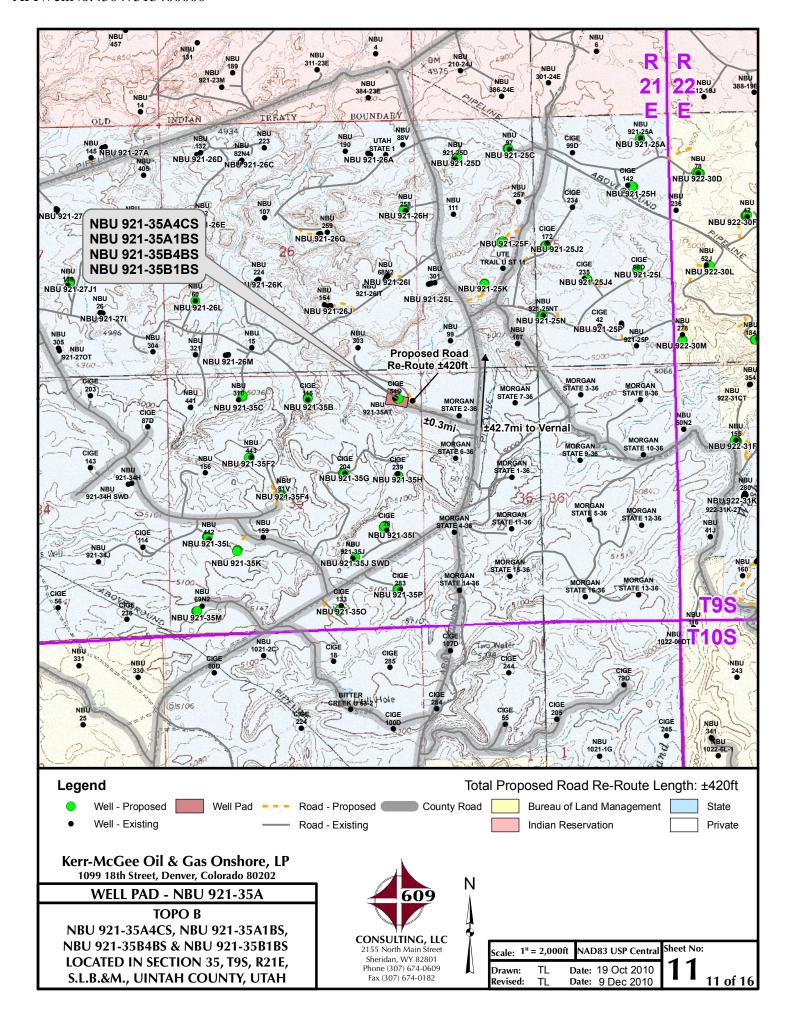


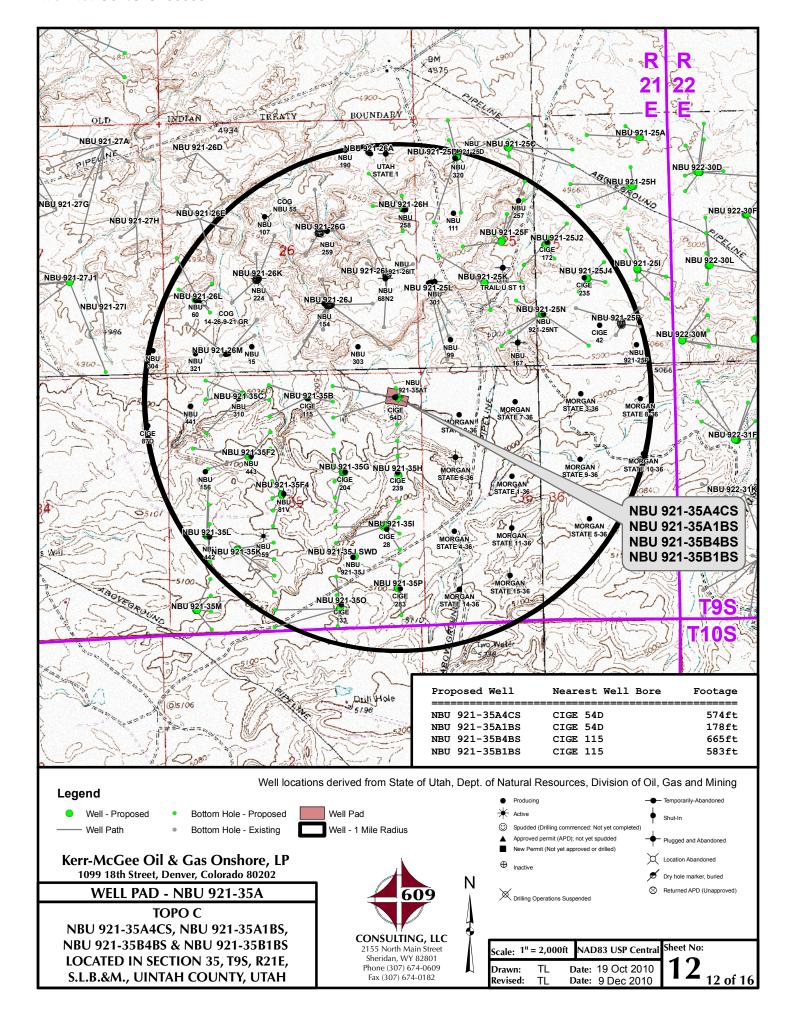
# Sheridan WY 82801

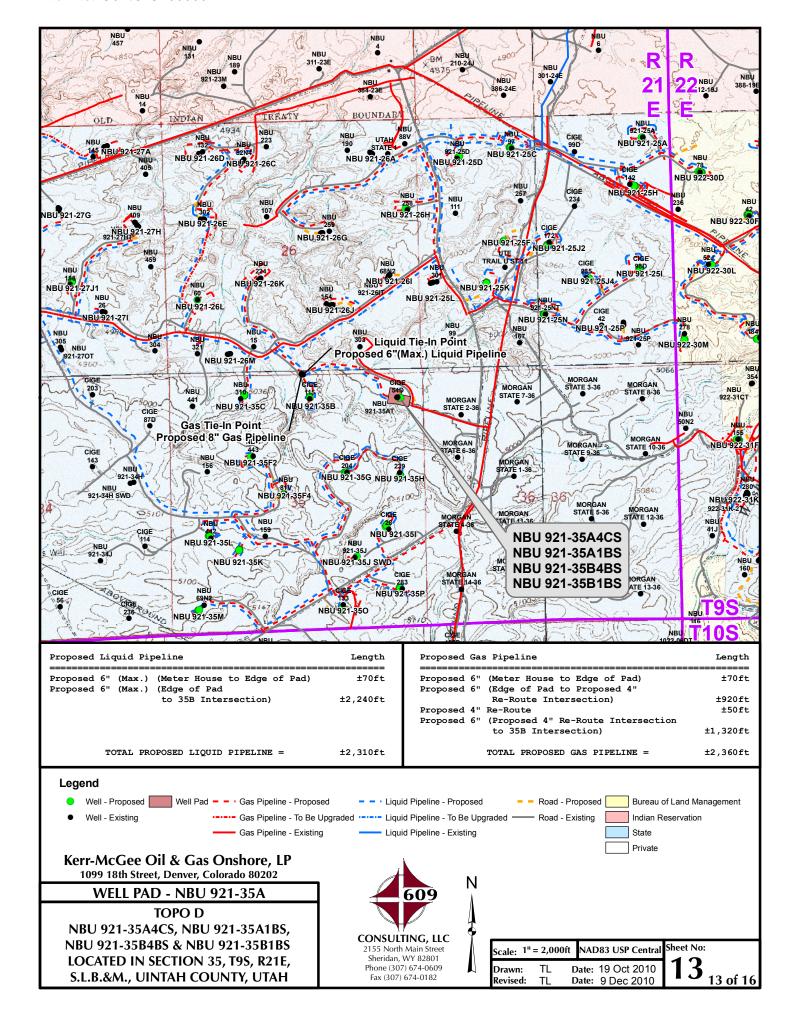
CONSULTING, LLC 2155 North Main Street Phone 307-674-0609 Fax 307-674-0182

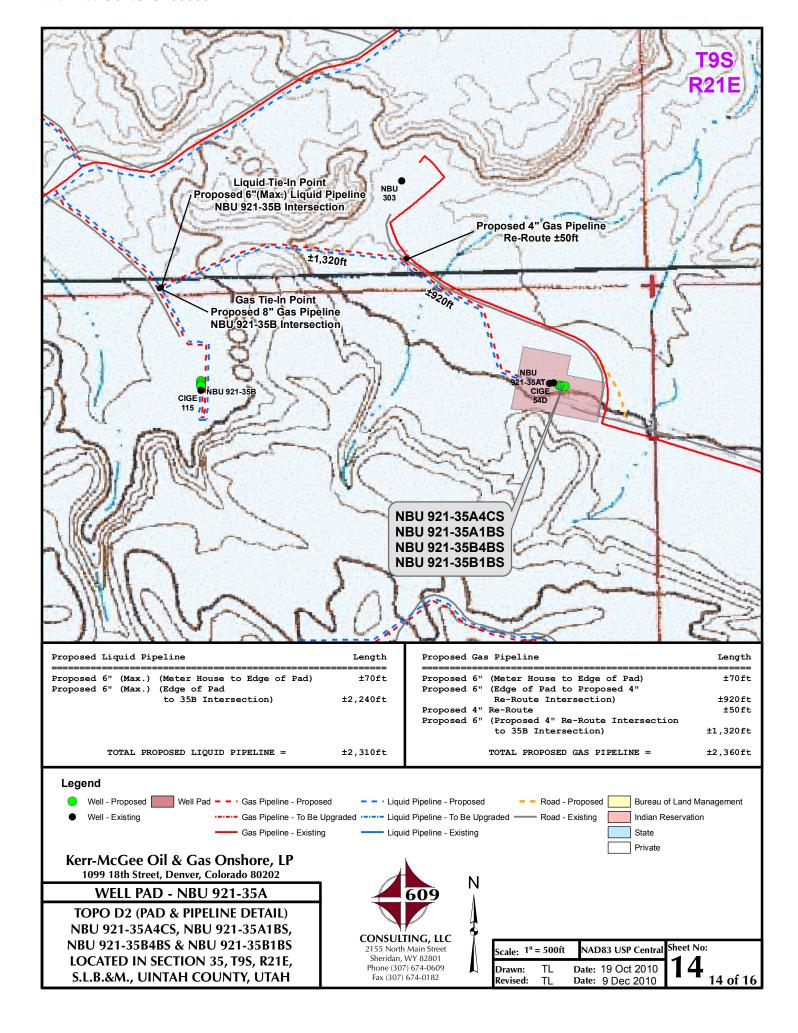
TIMBERLIN	JE (4	135) 789-1365
	& LAND SURVEYING WEST - VERNAL, UTAH 84	*
DATE PHOTOS TAKEN: 09-30-10	PHOTOS TAKEN BY: M.S.B.	SHEET NO:
DATE DRAWN: 10-04-10	DRAWN BY: K.H.G.	9
Date Last Revised:		9 OF 16

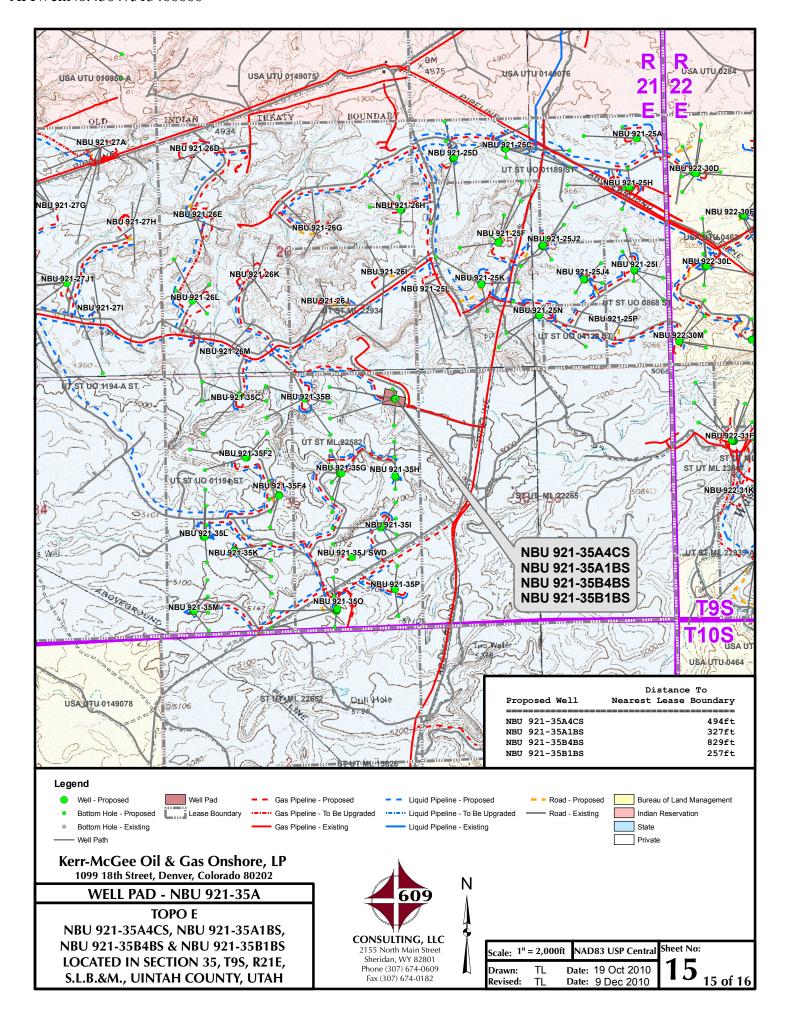












# Kerr-McGee Oil & Gas Onshore, LP WELL PAD – NBU 921-35A WELLS – NBU 921-35A4CS, NBU 921-35A1BS, NBU 921-35B4BS & NBU 921-35B1BS Section 35, T9S, R21E, S.L.B.&M.

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah, proceed in an easterly then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45. Exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 19.2 miles to a service road to the northwest. Exit right and proceed in a northwesterly direction along the service road approximately 0.3 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 43.0 miles in a southerly direction.

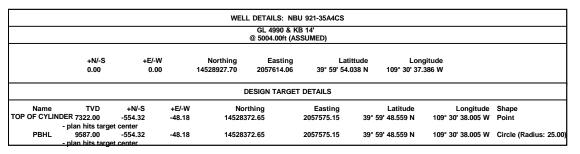


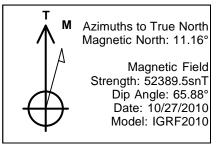
Project: Uintah County, UT UTM12 Site: NBU 921-35A Pad

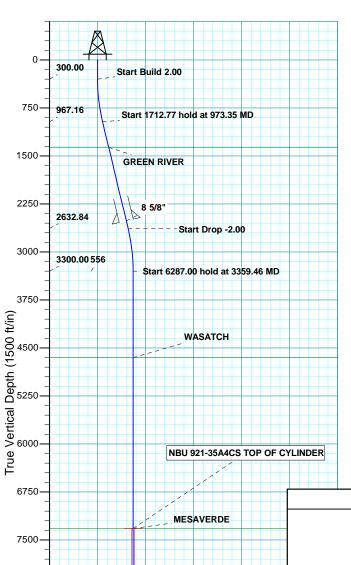
Well: NBU 921-35A4CS

Wellbore: OH Design: PLAN #1









TD at 9646.46

1500

Vertical Section at 184.97° (1500 ft/in)

2250

3000

8250

9000-

9750

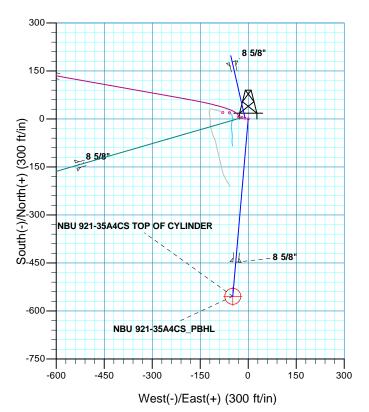
10500

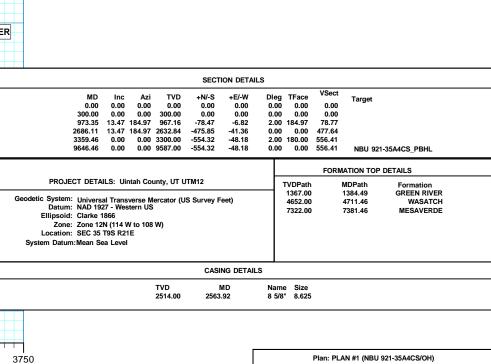
-750

9587.00 556

0

750





Created By: RobertScott

Date: 15:22, October 27 2010



# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 921-35A Pad NBU 921-35A4CS

ОН

Plan: PLAN #1

# **Standard Planning Report**

27 October, 2010







EDM5000-RobertS-Local Database:

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

NBU 921-35A Pad Site: Well: NBU 921-35A4CS

Wellbore: ОН Design: PLAN #1 Local Co-ordinate Reference:

**Survey Calculation Method:** 

TVD Reference:

MD Reference:

North Reference:

Well NBU 921-35A4CS GL 4990 & KB 14' @ 5004.00ft (ASSUMED)

GL 4990 & KB 14' @ 5004.00ft (ASSUMED)

Minimum Curvature

Mean Sea Level

Project Uintah County, UT UTM12

Map System: Universal Transverse Mercator (US Survey Feet)

Geo Datum: Zone 12N (114 W to 108 W) Map Zone:

NAD 1927 - Western US

NBU 921-35A Pad, SEC 35 T9S R21E Site

Northing: 14,528,933.77 usft 39° 59' 54.103 N Site Position: Latitude: From: Lat/Long Easting: 2,057,584.54 usft Longitude: 109° 30' 37.764 W

System Datum:

**Position Uncertainty:** 0.00 ft Slot Radius: 13.200 in **Grid Convergence:** 0.96°

Well NBU 921-35A4CS, 524' FNL 445' FEL

**Well Position** +N/-S -6.56 ft 14,528,927.71 usft Latitude: 39° 59' 54.038 N Northing: 109° 30' 37.386 W

+E/-W 29.41 ft Easting: 2,057,614.06 usft Longitude: **Position Uncertainty** 0.00 ft Wellhead Elevation: **Ground Level:** 4.990.00 ft

ОН Wellbore Declination Dip Angle Field Strength Magnetics **Model Name** Sample Date (°) (°) (nT) IGRF2010 10/27/2010 11.16 65.88 52,389

PLAN #1 Design **Audit Notes:** PLAN 0.00 Version: Phase: Tie On Depth: +N/-S Vertical Section: Depth From (TVD) +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 184.97

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
973.35	13.47	184.97	967.16	-78.47	-6.82	2.00	2.00	0.00	184.97	
2,686.11	13.47	184.97	2,632.84	-475.85	-41.36	0.00	0.00	0.00	0.00	
3,359.46	0.00	0.00	3,300.00	-554.32	-48.18	2.00	-2.00	0.00	180.00	
9,646.46	0.00	0.00	9,587.00	-554.32	-48.18	0.00	0.00	0.00	0.00	NBU 921-35A4CS_PE





EDM5000-RobertS-Local Database:

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

NBU 921-35A Pad Site: Well: NBU 921-35A4CS

Wellbore: ОН Design: PLAN #1 Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** 

Well NBU 921-35A4CS

GL 4990 & KB 14'

@ 5004.00ft (ASSUMED) GL 4990 & KB 14'

@ 5004.00ft (ASSUMED) True

Minimum Curvature

nned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00 300.00	0.00 0.00	0.00 0.00	200.00 300.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00
		0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2 400.00	2.00	184.97	399.98	-1.74	-0.15	1.75	2.00	2.00	0.00
500.00	4.00	184.97	499.84	-6.95	-0.60	6.98	2.00	2.00	0.00
600.00	6.00	184.97	599.45	-15.63	-1.36	15.69	2.00	2.00	0.00
700.00	8.00	184.97	698.70	-27.78	-2.41	27.88	2.00	2.00	0.00
800.00	10.00	184.97	797.47	-43.36	-3.77	43.52	2.00	2.00	0.00
900.00	12.00	184.97	895.62	-62.37	-5.42	62.60	2.00	2.00	0.00
973.35	13.47	184.97	967.16	-78.47	-6.82	78.77	2.00	2.00	0.00
Start 1712.7	7 hold at 973.35	MD							
1,000.00	13.47	184.97	993.08	-84.66	-7.36	84.98	0.00	0.00	0.00
1,100.00	13.47	184.97	1,090.33	-107.86	-9.38	108.26	0.00	0.00	0.00
1,200.00	13.47	184.97	1,187.59	-131.06	-11.39	131.55	0.00	0.00	0.00
1,300.00	13.47	184.97	1,284.84	-154.26	-13.41	154.84	0.00	0.00	0.00
1,384.49	13.47	184.97	1,367.00	-173.86	-15.11	174.52	0.00	0.00	0.00
GREEN RIV									
1.400.00	13.47	184.97	1,382.09	-177.46	-15.43	178.13	0.00	0.00	0.00
1,500.00	13.47	184.97	1,479.34	-200.66	-17.44	201.42	0.00	0.00	0.00
1,600.00	13.47	184.97	1,576.59	-223.86	-19.46	224.71	0.00	0.00	0.00
1,700.00	13.47	184.97	1,673.84	-247.06	-21.48	247.99	0.00	0.00	0.00
1,800.00	13.47	184.97	1,771.09	-270.26	-23.49	271.28	0.00	0.00	0.00
1,900.00	13.47	184.97	1,868.34	-270.26	-25.49 -25.51	294.57	0.00	0.00	0.00
2,000.00	13.47	184.97	1,965.59	-316.67	-27.53	317.86	0.00	0.00	0.00
2,100.00	13.47	184.97	2,062.84	-339.87	-29.54	341.15	0.00	0.00	0.00
2,200.00	13.47	184.97	2,160.09	-363.07	-31.56	364.44	0.00	0.00	0.00
2,300.00	13.47	184.97	2,257.34	-386.27	-33.58	387.73	0.00	0.00	0.00
2,400.00	13.47	184.97	2,354.59	-409.47	-35.59	411.01	0.00	0.00	0.00
2,500.00	13.47	184.97	2,451.84	-432.67	-37.61	434.30	0.00	0.00	0.00
2,563.92	13.47	184.97	2,514.00	-447.50	-38.90	449.19	0.00	0.00	0.00
8 5/8"									
2,600.00	13.47	184.97	2,549.09	-455.87	-39.63	457.59	0.00	0.00	0.00
2,686.11	13.47	184.97	2,632.84	-475.85	-41.36	477.64	0.00	0.00	0.00
Start Drop -	2.00								
2,700.00	13.19	184.97	2,646.35	-479.04	-41.64	480.85	2.00	-2.00	0.00
2,800.00	11.19	184.97	2,744.09	-500.07	-43.47	501.96	2.00	-2.00	0.00
2,900.00	9.19	184.97	2,842.51	-517.70	-45.00	519.65	2.00	-2.00	0.00
3,000.00	7.19	184.97	2,941.48	-531.89	-46.23	533.89	2.00	-2.00	0.00
3,100.00	5.19	184.97	3,040.90	-542.63	-47.17	544.67	2.00	-2.00	0.00
3,200.00	3.19	184.97	3,140.62	-549.90	-47.80	551.98	2.00	-2.00	0.00
3,300.00	1.19	184.97	3,240.55	-553.71	-48.13	555.80	2.00	-2.00	0.00
3,359.46	0.00	0.00	3,300.00	-554.32	-48.18	556.41	2.00	-2.00	294.38
Start 6287.0	0 hold at 3359.46	6 MD							
3,400.00	0.00	0.00	3,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
3,500.00	0.00	0.00	3,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
3,600.00	0.00	0.00	3,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
3,700.00	0.00	0.00	3,640.54	-554.32	-48.18	556.41	0.00	0.00	0.00
3,800.00	0.00	0.00	3,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
3,900.00	0.00	0.00	3,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-35A Pad

 Well:
 NBU 921-35A4CS

Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference: Survey Calculation Method: Well NBU 921-35A4CS

GL 4990 & KB 14'

@ 5004.00ft (ASSUMED) GL 4990 & KB 14' @ 5004.00ft (ASSUMED)

True

Minimum Curvature

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,000.00	0.00	0.00	3,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,100.00	0.00	0.00	4,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,200.00	0.00	0.00	4,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,300.00	0.00	0.00	4,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,400.00	0.00	0.00	4,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,500.00	0.00	0.00	4,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,600.00	0.00	0.00	4,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,700.00	0.00	0.00	4,640.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,711.46	0.00	0.00	4,652.00	-554.32	-48.18	556.41	0.00	0.00	0.00
WASATCH									
4,800.00	0.00	0.00	4,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
4,900.00	0.00	0.00	4,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,000.00	0.00	0.00	4,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,100.00	0.00	0.00	5,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,200.00	0.00	0.00	5,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,300.00	0.00	0.00	5,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,400.00	0.00	0.00	5,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,500.00	0.00	0.00	5,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,600.00	0.00	0.00	5,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,700.00	0.00	0.00	5,640.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,800.00	0.00	0.00	5,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
5,900.00	0.00	0.00	5,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,000.00	0.00	0.00	5,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,100.00	0.00	0.00	6,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,200.00	0.00	0.00	6,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,300.00	0.00	0.00	6,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,400.00	0.00	0.00	6,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,500.00	0.00	0.00	6,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,600.00	0.00	0.00	6,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,700.00	0.00	0.00	6,640.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,800.00	0.00	0.00	6,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
6,900.00	0.00	0.00	6,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,000.00	0.00	0.00	6,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,100.00	0.00	0.00	7,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,200.00	0.00	0.00	7,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,300.00	0.00	0.00	7,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,381.46	0.00	0.00	7,322.00	-554.32	-48.18	556.41	0.00	0.00	0.00
	: - NBU 921-35A			001.02	10.10	000.11	0.00	0.00	0.00
7.400.00	0.00	0.00	7,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,500.00	0.00	0.00	7,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,600.00	0.00	0.00	7,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,700.00	0.00	0.00	7,640.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,800.00	0.00	0.00	7,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
7,900.00	0.00	0.00	7,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00
8,000.00	0.00	0.00	7,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
8,100.00	0.00	0.00	8,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
8,200.00	0.00	0.00	8,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
	0.00	0.00							
		0.00	8,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
8,300.00			Q 240 E4	EE 1 22	10 10	EEC 11			ስ ስስ
8,400.00	0.00	0.00	8,340.54 8,440.54	-554.32 -554.32	-48.18 -48.18	556.41	0.00	0.00	0.00
			8,340.54 8,440.54 8,540.54	-554.32 -554.32 -554.32	-48.18 -48.18 -48.18	556.41 556.41 556.41	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-35A Pad

 Well:
 NBU 921-35A4CS

Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference:

**Survey Calculation Method:** 

TVD Reference:

North Reference:

@ 5004.00ft (ASSUMED)

MD Reference: GL 4990 & KB 14'

GL 4990 & KB 14' @ 5004.00ft (ASSUMED)

True

Minimum Curvature

Well NBU 921-35A4CS

GL 4990 & KB 14'

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,800.00	0.00	0.00	8,740.54	-554.32	-48.18	556.41	0.00	0.00	0.00
8,900.00	0.00	0.00	8,840.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,000.00	0.00	0.00	8,940.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,100.00	0.00	0.00	9,040.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,200.00	0.00	0.00	9,140.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,300.00	0.00	0.00	9,240.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,400.00	0.00	0.00	9,340.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,500.00	0.00	0.00	9,440.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,600.00	0.00	0.00	9,540.54	-554.32	-48.18	556.41	0.00	0.00	0.00
9,646.46	0.00	0.00	9,587.00	-554.32	-48.18	556.41	0.00	0.00	0.00
NBU 921-35/	A4CS_PBHL								

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NBU 921-35A4CS TOP - plan hits target cen - Point	0.00 ter	0.00	7,322.00	-554.32	-48.18	14,528,372.66	2,057,575.15	39° 59' 48.559 N	109° 30' 38.005 W
NBU 921-35A4CS_PBH - plan hits target cen - Circle (radius 25.00		0.00	9,587.00	-554.32	-48.18	14,528,372.66	2,057,575.15	39° 59' 48.559 N	109° 30' 38.005 W

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(in)	(in)
	2,563.92	2,514.00	8 5/8"	8.625	11.000

Formations							
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
	1,384.49	1,367.00	GREEN RIVER				
	4,711.46	4,652.00	WASATCH				
	7,381.46	7,322.00	MESAVERDE				





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-35A Pad

 Well:
 NBU 921-35A4CS

Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** 

Well NBU 921-35A4CS

GL 4990 & KB 14'

@ 5004.00ft (ASSUMED)

GL 4990 & KB 14' @ 5004.00ft (ASSUMED)

True

Minimum Curvature

Plan Annotatio	ns				
	Measured Depth (ft)	Vertical Depth (ft)	Local Coor +N/-S (ft)	dinates +E/-W (ft)	Comment
	000.00	000.00			Ota d Puild O OO
	300.00	300.00	0.00	0.00	Start Build 2.00
	973.35	967.16	-78.47	-6.82	Start 1712.77 hold at 973.35 MD
	2,686.11	2.632.84	-475.85	-41.36	Start Drop -2.00
	3,359.46	3.300.00	-554.32	-48.18	Start 6287.00 hold at 3359.46 MD
	9.646.46	9.587.00	-554.32	-48.18	TD at 9646.46

### **NBU 921-35A1BS**

Surface: 522' FNL 455' FEL (NE/4NE/4) BHL: 327' FNL 499' FEL (NE/4NE/4)

### **NBU 921-35A4CS**

Surface: 524' FNL 445' FEL (NE/4NE/4) BHL: 1,079' FNL 494' FEL (NE/4NE/4)

### **NBU 921-35B1BS**

Surface: 518' FNL 474' FEL (NE/4NE/4) BHL: 257' FNL 1,813' FEL (NW/4NE/4)

### NBU 921-35B4BS

Surface: 520' FNL 464' FEL (NE/4NE/4) BHL: 916' FNL 1,817' FEL (NW/4NE/4)

Pad: NBU 921-35A Section 35 T9S R21E Mineral Lease: ML 22582

Uintah County, Utah Operator: Kerr-McGee Oil & Gas Onshore LP

### MULTI-POINT SURFACE USE PLAN of OPERATIONS (SUPO)

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including, but not limited to, APDs/SULAs/ROEs/ROWs and/or easements).

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

### A. <u>Existing Roads</u>:

Existing roads consist of county roads and improved/unimproved lease roads. APC/KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and

utility corridors exceed 50', unless otherwise approved.

### **B.** Planned Access Roads:

Approximately  $\pm 420$ ' (0.08 miles) of road re-route is proposed (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

Where roads are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

Turnouts; major cut and fills; culverts; bridges; gates; cattle guards; low water crossings; or modifications needed to existing infrastructure/facilities were determined at the on-site and, as applicable, are typically shown on attached Exhibits and Topo maps.

### C. Location of Existing and Proposed Facilities:

This pad will expand the existing pad for the NBU 921-35AT and the CIGE 54D. The NBU 921-25AT well location is a vertical producing well and the CIGE 54D well is a SWD Monitor well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of November 11, 2010.

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of each well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) aboveground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of UDOGM. Gathering facilities:

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 2,360$ ° and the individual segments are broken up as follows:

 $\pm 70^{\circ}$  (0.01 miles) –New 6" buried gas pipeline from the meter to the edge of the pad.

 $\pm 920$ ' (0.2 miles) –New 6" buried gas pipeline from the edge of pad to the proposed 4" pipeline re-route intersection.

±50' (0.01 miles) – Re-route 4" buried gas pipeline to the proposed 6" gas pipeline.

 $\pm 1,320$ ' (0.3 miles) –New 6" buried gas pipeline from the proposed 4" pipeline re-route intersection to the NBU 921-35B pad intersection.

The total liquid gathering pipeline distance from the separator to the tie in point is  $\pm 2,310$ ' and the individual segments are broken up as follows:

 $\pm 70$ ' (0.01 miles) –New 6" buried liquid pipeline from the separator to the edge of the pad.  $\pm 2,240$ ' (0.4 miles) –New 6" buried liquid pipeline from the edge of pad to the NBU 921-35B pad intersection.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. Kerr-McGee requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, Kerr-McGee requests a temporary 45' construction right-of-way and 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

### **D.** Location and Type of Water Supply:

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

### **E.** Source of Construction Materials:

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

### F. Methods of Handling Waste Materials:

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E

Ace Oilfield in Sec. 2 T6S R20E MC&MC in Sec. 12 T6S R19E Pipeline Facility in Sec. 36 T9S R20E

Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E

Bonanza Evaporation Pond in Sec. 2 T10S R23E

Ouray #1 SWD in Sec. 1 T9S R21E NBU 159 SWD in Sec. 35 T9S R21E CIGE 112D SWD in Sec. 19 T9S R21E CIGE 114 SWD in Sec. 34 T9S R21E NBU 921-34K SWD in Sec. 34 T9S R21E NBU 921-33F SWD in Sec. 33 T9S R21E

NBU 921-34L SWD in Sec. 34 T9S R21E

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20-mil or thicker, The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. Any additional pits necessary to subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

Any undesirable event, accidental release, or in excess of reportable quantities will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule, and, where State wells are participatory to a Federal agreement, according to NTL-3A.

### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition,

no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

### **G.** Ancillary Facilities:

None are anticipated.

### H. Well Site Layout (see Well Pad Design Summary):

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1983 (NAD83) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

### I. Plans for Reclamation of the Surface:

Surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. This reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but are not limited to: re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

### **Interim Reclamation**

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where

#### NBU 921-35A1BS / 35A4CS/ 35B1BS/ 35B4BS

possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit.

### **Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by APC/KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to UDOGM.

### Seeding and Measures Common to Interim and Final Reclamation

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become permanently established. These materials will include, but are not limited to, erosion control blankets and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

### NBU 921-35A1BS / 35A4CS/ 35B1BS/ 35B4BS

Seeding will occur year-round as conditions allow. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for revegetation. The site specific seed mix will be provided by SITLA.

# J. Surface/Mineral Ownership:

SITLA 675 East 500 South, Suite 500 Salt Lake City, UT 84102

# K. Other Information:

None

### NBU 921-35A1BS / 35A4CS/ 35B1BS/ 35B4BS

### M. Lessee's or Operators' Representative & Certification:

Danielle Piernot Regulatory Analyst I Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6156 Tommy Thompson General Manager, Drilling Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Danielle Piernot

November 19, 2010

Date



Kerr-McGee Oil & Gas Onshore LP PO Box 173779 DENVER, CO 80217-3779

October 25, 2010

Ms. Diana Mason Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11

NBU 921-34A4CS

T9S-R21E

Section 35: NENE (Surf), NENE (Bottom)

Surface: 445' FEL, 524' FNL

Bottom Hole: 494' FEL, 1079' FNL

Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling.

- Kerr-McGee's NBU 921-35A4CS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Joe Matney

Sr. Staff Landman

Joe Matines

# **United States Department of the Interior**

# **BUREAU OF LAND MANAGEMENT**

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

November 19, 2010

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2010 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2010 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

### **NBU 921-35A Pad**

43-047-51339 NBU 921-35A1BS Sec 35 T09S R21E 0522 FNL 0455 FEL BHL Sec 35 T09S R21E 0327 FNL 0499 FEL 43-047-51340 NBU 921-35A4CS Sec 35 T09S R21E 0524 FNL 0445 FEL BHL Sec 35 T09S R21E 1079 FNL 0494 FEL 43-047-51341 NBU 921-35B1BS Sec 35 T09S R21E 0518 FNL 0474 FEL BHL Sec 35 T09S R21E 0257 FNL 1813 FEL 43-047-51342 NBU 921-35B4BS Sec 35 T09S R21E 0520 FNL 0464 FEL BHL Sec 35 T09S R21E 0916 FNL 1817 FEL NBU 921-35B Pad 43-047-51343 NBU 921-35B1CS Sec 35 T09S R21E 0468 FNL 2339 FEL BHL Sec 35 T09S R21E 0582 FNL 1816 FEL 43-047-51344 NBU 921-35B4CS Sec 35 T09S R21E 0488 FNL 2340 FEL BHL Sec 35 T09S R21E 1249 FNL 1818 FEL 43-047-51345 NBU 921-35C1BS Sec 35 T09S R21E 0458 FNL 2338 FEL BHL Sec 35 T09S R21E 0207 FNL 2154 FWL 43-047-51346 NBU 921-35C4BS Sec 35 T09S R21E 0478 FNL 2339 FEL BHL Sec 35 T09S R21E 0860 FNL 2144 FWL API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

#### NBU 921-35C Pad

43-047-51347 NBU 921-35C1CS Sec 35 T09S R21E 0399 FNL 1591 FWL BHL Sec 35 T09S R21E 0522 FNL 2147 FWL 43-047-51348 NBU 921-35D1BS Sec 35 T09S R21E 0389 FNL 1592 FWL BHL Sec 35 T09S R21E 0089 FNL 0831 FWL 43-047-51349 NBU 921-35D1CS Sec 35 T09S R21E 0409 FNL 1589 FWL BHL Sec 35 T09S R21E 0488 FNL 0823 FWL 43-047-51350 NBU 921-35D4CS Sec 35 T09S R21E 0418 FNL 1588 FWL BHL Sec 35 T09S R21E 1182 FNL 0818 FWL

#### NBU 921-35F2 Pad

43-047-51351 NBU 921-35C4CS Sec 35 T09S R21E 1686 FNL 1699 FWL BHL Sec 35 T09S R21E 1187 FNL 2148 FWL 43-047-51352 NBU 921-35E1CS Sec 35 T09S R21E 1691 FNL 1679 FWL BHL Sec 35 T09S R21E 1933 FNL 0826 FWL 43-047-51353 NBU 921-35E2AS Sec 35 T09S R21E 1688 FNL 1689 FWL BHL Sec 35 T09S R21E 1498 FNL 0535 FWL

This office has no objection to permitting the wells at this time.

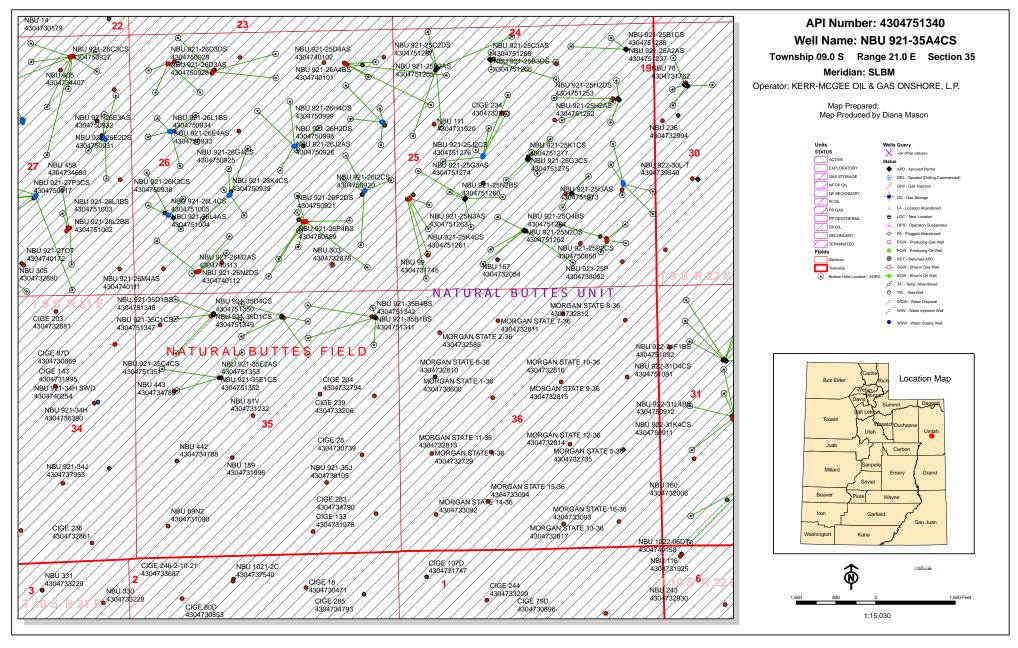
Michael L. Coulthard

Digitally signed by Michael L. Coulthard

DN: cn=Michael L. Coulthard, o=Bureau of Land Management,
ou=Branch of Minerals, email=Michael\_Coulthard@blm.gov, c=US Date: 2010.11.19 09:52:13 -07'00'

bcc: File - Natural Buttes Unit Division of Oil Gas and Mining Central Files Agr. Sec. Chron Fluid Chron

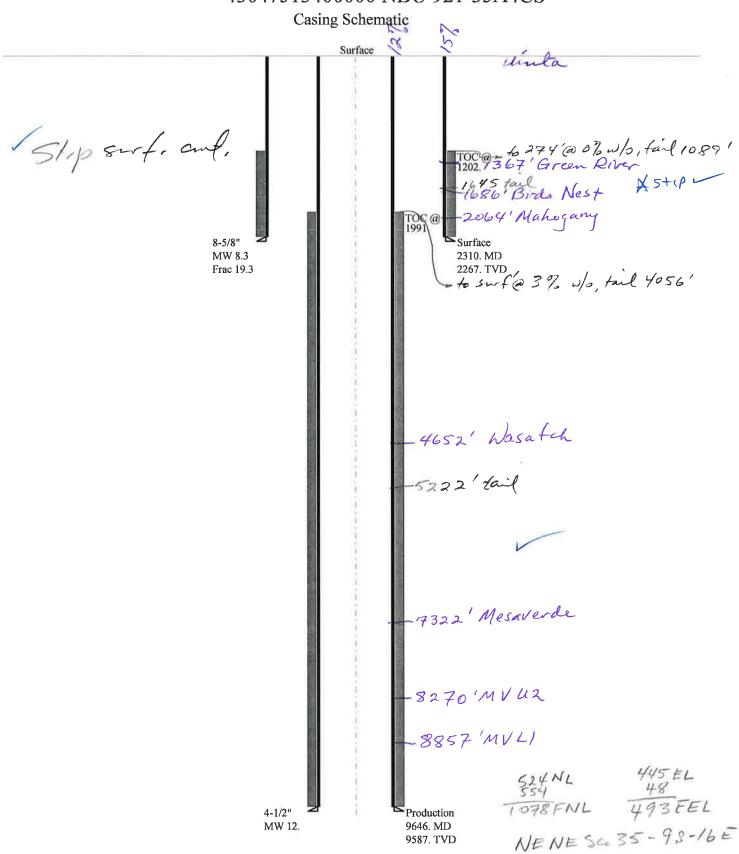
MCoulthard:mc:11-19-10



# BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 921-35A4CS 43047513400000

Well Name		KERR-MCGEE O	OIL & (	GAS ONSHO	ORE	E, L.P. NBU 921-3	35A4	4CS 430475134		
String		Surf	Pro	od	T		T			
Casing Size(")		8.625	4.5	500	1		Ī			
Setting Depth (TVD)		2267	958	587	1		Ī	<del></del>		
Previous Shoe Setting Dept	th (TVD)	40	226	267	1		Ī	<del></del>		
Max Mud Weight (ppg)		8.3	12.	2.0	1		Ī	<del></del>		
BOPE Proposed (psi)		500	500	000	1		Ť	<del></del>		
Casing Internal Yield (psi)		3390	778	780	1		Ť	<del></del>		
Operators Max Anticipate	d Pressure (psi)	5848	11.		1	i i	Ť	<del></del>		
			11-		_		13.			
Calculations	Sui	rf String				8.6	525	5 "		
Max BHP (psi)		.052*Setti	ing l	Depth*N	1V	V= 982				
							_	BOPE Adequate For Drilling And Setting Casing at Depth?		
MASP (Gas) (psi)		x BHP-(0.12*				1 1		NO air drill		
MASP (Gas/Mud) (psi)	Ma	ax BHP-(0.22*	*Set	tting Dep	th	)= 483		YES OK		
				~ ~	_			*Can Full Expected Pressure Be Held At Previous Shoe?		
Pressure At Previous Shoe		Depth - Previo	ous S	Shoe Dep	th	)= 492		NO Reasonable for area		
Required Casing/BOPE To						2267		psi		
*Max Pressure Allowed @	Previous Casing Shoe=				_	40		psi *Assumes 1psi/ft frac gradient		
Calculations	Pro	od String				4.5	500	"		
Max BHP (psi)		.052*Setti	ing	Depth*N	1V					
(4**)				- vp		1 0002		BOPE Adequate For Drilling And Setting Casing at Depth?		
MASP (Gas) (psi)	Ma	nx BHP-(0.12*	*Set	tting Dep	th	)= 4832		YES		
MASP (Gas/Mud) (psi)		x BHP-(0.22*			_	1		YES OK		
( ) ( <b>.</b> )		. (**			_	7	_	*Can Full Expected Pressure Be Held At Previous Shoe?		
Pressure At Previous Shoe	Max BHP22*(Setting I	Depth - Previo	us S	Shoe Dep	th	)= 4372		NO Reasonable		
Required Casing/BOPE To	est Pressure=					5000		psi		
*Max Pressure Allowed @	Previous Casing Shoe=					2267		psi *Assumes 1psi/ft frac gradient		
								1 · · · · · · · · · · · · · · · · · · ·		
Calculations		String						"		
Max BHP (psi)		.052*Setti	ing l	Depth*N	1V	V=				
								BOPE Adequate For Drilling And Setting Casing at Depth?		
MASP (Gas) (psi)		ax BHP-(0.12*				1.		NO		
MASP (Gas/Mud) (psi)	Ma	ax BHP-(0.22*	*Set	tting Dep	th	)=		NO .		
					_			*Can Full Expected Pressure Be Held At Previous Shoe?		
Pressure At Previous Shoe	<u> </u>	Depth - Previo	ous S	Shoe Dep	oth	)=		NO		
Required Casing/BOPE To								psi		
*Max Pressure Allowed @	Previous Casing Shoe=							psi *Assumes 1psi/ft frac gradient		
Calculations		String			_		_	п		
Max BHP (psi)		.052*Setti	ing	Depth*N	1V	V=				
<u> </u>				-				BOPE Adequate For Drilling And Setting Casing at Depth?		
MASP (Gas) (psi)	Ma	ax BHP-(0.12*	*Set	tting Dep	th	)=		NO		
MASP (Gas/Mud) (psi)	Ma	ax BHP-(0.22*	*Set	tting Dep	th	)=		NO		
					_			*Can Full Expected Pressure Be Held At Previous Shoe?		
Pressure At Previous Shoe	Max BHP22*(Setting Γ	Depth - Previo	us S	Shoe Dep	th	)=		NO NO		
Required Casing/BOPE To	est Pressure=							psi		
*Max Pressure Allowed @	Previous Casing Shoe=							psi *Assumes 1psi/ft frac gradient		

# 43047513400000 NBU 921-35A4CS



Well name:

43047513400000 NBU 921-35A4CS

Operator:

KERR-MCGEE OIL & GAS ONSHORE, L.P.

String type:

Project ID:

Surface

43-047-51340

Location:

**UINTAH** 

COUNTY

Minimum design factors: **Environment:** 

<u>Collapse</u>

Mud weight:

Collapse: Design factor H2S considered?

No 74 °F

Design is based on evacuated pipe.

Design parameters:

8.330 ppg

1.125

1.00

1.80 (J)

1.70 (J)

1.60 (J)

1.50 (J)

1.50 (B)

Surface temperature: Bottom hole temperature:

Temperature gradient: Minimum section length:

106 °F 1.40 °F/100ft

**Burst:** Design factor

Cement top:

100 ft 1,202 ft

**Burst** 

Max anticipated surface

No backup mud specified.

pressure: Internal gradient: Calculated BHP

2.033 psi 0.120 psi/ft

2,305 psi

Tension:

8 Round STC: 8 Round LTC: Buttress:

Premium: Body yield:

Tension is based on air weight. Neutral point: 2,024 ft Directional Info - Build & Drop

Kick-off point 300 ft Departure at shoe: 390 ft

Maximum dogleg: 2 °/100ft Inclination at shoe: 13.47°

Re subsequent strings: Next setting depth: 9.587 ft Next mud weight: 12.000 ppg Next setting BHP: 5,976 psi

Fracture mud wt: Fracture depth: Injection pressure:

19.250 ppg 2,310 ft 2,310 psi

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	2310	8.625	28.00	I-55	LT&C	2267	2310	7.892	91476
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	981	1880	1.916	2305	3390	1.47	63.5	348	5.48 J

Prepared

Helen Sadik-Macdonald

Div of Oil, Gas & Mining

Phone: 801 538-5357 FAX: 801-359-3940

Date: December 8,2010 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2267 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Well name:

43047513400000 NBU 921-35A4CS

Operator:

KERR-MCGEE OIL & GAS ONSHORE, L.P.

String type:

Production

Project ID:

43-047-51340

Location:

**UINTAH** 

COUNTY

Inclination at shoe:

Minimum design factors: Design parameters: **Environment:** Collapse: H2S considered? **Collapse** No 74 °F Mud weight: 12.000 ppg Design factor 1.125 Surface temperature: 1.000 ppg Bottom hole temperature: 208 °F Internal fluid density: 1.40 °F/100ft Temperature gradient: Minimum section length: 100 ft Burst: Design factor 1.00 Cement top: 1,991 ft **Burst** Max anticipated surface pressure: 3,867 psi Internal gradient: 0.220 psi/ft Tension: Directional Info - Build & Drop 8 Round STC: 1.80 (J) Calculated BHP Kick-off point 300 ft 5,976 psi 1.80 (J) Departure at shoe: 556 ft 8 Round LTC: No backup mud specified. Buttress: 1.60 (J) Maximum dogleg: 2 °/100ft 0 °

Tension is based on air weight.

1.50 (J)

1.60 (B)

Premium:

Body yield:

Neutral point: 7,926 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Est. Cost (\$)
1	9646	4.5	11.60	I-80	LT&C	9587	9646	3.875	127327
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor
1	5478	6360	1.161	5976	7780	1.30	111.2	212	1.91 J

Prepared

Helen Sadik-Macdonald

Div of Oil, Gas & Mining

Phone: 801 538-5357 FAX: 801-359-3940

Date: December 8,2010 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 9587 ft, a mud weight of 12 ppg. An internal gradient of .052 psi/ft was used for collapse from TD to Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

From: Jim Davis

To: Bonner, Ed; Hill, Brad; Mason, Diana

CC: Curry, Kristine; Danielle Piernot; Garrison, LaVonne; Hayden, Martha;...

**Date:** 12/22/2010 5:49 AM

**Subject:** Kerr McGee APD approvals in 9S 21E Sec 35 **Attachments:** KMG approvals 921-35 on 12.22.2010.xls

The following wells have been approved by SITLA under the following arch and paleo stipulations. This is a long list, so I'm attaching a spreadsheet with the same information.

A note on arch and paleo stipulations: Wells that have an arch note "non-significant site" do not need to be avoided or mitigated. Only those that say "needs to be avoided".

The paleo reports make recommendations for "spot paleo monitoring" or "full paleo monitoring". It is my understanding that Kerr McGee is taking these stipulations and doing full monitoring in either case, in an abundance of caution.

-Jim Davis

Well Name API Paleo Stipulation	ons Arch Stipulation	ns
Kerr-McGee's NBU 921-35A1BS	API #4304751339	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		,
Kerr-McGee's NBU 921-35A4CS	API #4304751340	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35B1BS	API #4304751341	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35B4BS	API #4304751342	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35B1CS	API #4304751343	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; eligible site 42Ur	n6461, just south of prope	
Kerr-McGee's NBU 921-35B4CS	API #4304751344	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; eligible site 42Ur		
Kerr-McGee's NBU 921-35C1BS	API #4304751345	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; eligible site 42Ur	n6461, just south of prope	
Kerr-McGee's NBU 921-35C4BS	API #4304751346	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; eligible site 42Ur	n6461, just south of prope	
Kerr-McGee's NBU 921-35C1CS	API #4304751347	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35D1BS	API #4304751348	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35D1CS	API #4304751349	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35D4CS	API #4304751350	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35C4CS	API #4304751351	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35E1CS	API #4304751352	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35E2AS	API #4304751353	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35F1BS	API #4304751355	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35F4BS	API #4304751356	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35F4CS	API #4304751357	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35K1BS	API #4304751358	IPC 10-97 Full Paleo Monitoring (U-07-

NO 44071 : \		
MQ-1437b,i,p,s)	A DI #400 4754050	IDO 40 07 F. II Dalas Massitudas (II 07
Kerr-McGee's NBU 921-35K1CS	API #4304751359	IPC 10-97 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35G1BS	API #4304751360	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant		
Kerr-McGee's NBU 921-35G1CS	API #4304751361	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant		
Kerr-McGee's NBU 921-35G4BS	API #4304751362	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant	t site, 42Un2395, adjace	ent to the road)
Kerr-McGee's NBU 921-35G4CS	API #4304751363	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant	t site, 42Un2395, adiace	ent to the road)
Kerr-McGee's NBU 921-35J1S API #4		0-98 Spot Paleo Monitoring (U-07-
MQ-1437b,i,p,s; 1 non-significant site, 4		
Kerr-McGee's NBU 921-35H1BS	API #4304751365	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	7.1.7.7.100.17.0.1000	in a to so apart also merinering
Kerr-McGee's NBU 921-35H1CS	API #4304751366	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	A11#4304731300	ii o to so oper i alco Monitoring
Kerr-McGee's NBU 921-35H4BS	API #4304751367	IPC 10-98 Spot Paleo Monitoring
	AF1#4304751307	IFC 10-96 Spot Faleo Monitoring
(U-07-MQ-1437b,i,p,s)	A DI #400 4754000	IDC 40.00 Coat Dalas Manitaria
Kerr-McGee's NBU 921-35H4CS	API #4304751368	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		0.400 = 11 = 1.4.11.11.11.11.11.11.11.11.11.11.11.11.
Kerr-McGee's NBU 921-35I1BS API #4	304751369 IPC 10	0-100 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35I1CS	API #4304751370	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35I4BS API #43	304751371 IPC 1	0-100 Full Paleo Monitoring (U-07-
MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35I4CS	API #4304751372	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		<b>G</b>
Kerr-McGee's NBU 921-35J1CS	API #4304751373	IPC 10-98 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		3
Kerr-McGee's NBU 921-35J4BS	API #4304751374	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	711 1 11 100 11 0 101 1	in a to too tail taloo wormoning
Kerr-McGee's NBU 921-35K4BS	API #4304751375	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	A11#4304731373	ii C 10-99 Spot i aleo Monitoring
Kerr-McGee's NBU 921-35K4CS	API #4304751376	IDC 10.00 Shot Pales Manitoring
	API #4304/513/6	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	A DI #400 4754077	IDO 40 00 Ocat Dalas Maritagian
Kerr-McGee's NBU 921-35N1BS	API #4304751377	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)	151 // 100 155 1050	150 40 00 0 + 5 1 - 14 - 15 - 1
Kerr-McGee's NBU 921-35N1CS	API #4304751378	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35E4CS	API #4304751379	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35P4CS	API #4304751380	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35P1CS	API #4304751381	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		· ·
Kerr-McGee's NBU 921-35P1BS	API #4304751382	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		g
Kerr-McGee's NBU 921-3504CS	API #4304751383	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant		
Kerr-McGee's NBU 921-35O4BS	API #4304751384	IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant		
	API #4304751385	
Kerr-McGee's NBU 921-3501CS		IPC 10-100 Full Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant		
Kerr-McGee's NBU 921-35L1BS	API #4304751386	IPC 10-99 Spot Paleo Monitoring

(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35O1BS	API #4304751387	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant	site, 42Un1836, adjacer	nt to pipeline)
Kerr-McGee's NBU 921-35N4CS	API #4304751388	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant	site, 42Un1836, adjacer	nt to pipeline)
Kerr-McGee's NBU 921-35L1CS	API #4304751389	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35L4CS	API #4304751390	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M1BS	API #4304751391	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M1CS	API #4304751392	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M4BS	API #4304751393	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35M4CS	API #4304751394	IPC 10-99 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s)		
Kerr-McGee's NBU 921-35N4BS	API #4304751395	IPC 10-100 Spot Paleo Monitoring
(U-07-MQ-1437b,i,p,s; 1 non-significant	site, 42Un1836, adjacer	nt to pipeline)

# **ON-SITE PREDRILL EVALUATION**

# Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.

Well Name NBU 921-35A4CS

API Number 43047513400000 APD No 3153 Field/Unit NATURAL BUTTES

**Location: 1/4,1/4** NENE **Sec** 35 **Tw** 9.0S **Rng** 21.0E 524 FNL 445 FEL

GPS Coord (UTM) 627156 4428429 Surface Owner

### **Participants**

See Other Comments:

# Regional/Local Setting & Topography

The general area is within the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 36 air miles and 43.0 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads to the site. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs, furnishing water for antelope or livestock.

The NBU 921-35A pad will be created by slightly enlarging the existing pad of the CIGE 541 and NBU 921-35AT gas wells. It will be primarily enlarged to the east and north. Four gas wells, to be directionally drilled, will be added. They are the NBU 921-35B1BS, 921-35A1BS, 921-35B4BS and 921-35A4CS. The pad begins at the foot of an existing vertical cut into a side-hill on the south. It extends east into a gentle area. The pad will be widened from 47 to 60 feet between Corners 8 and 9. No drainages intersect the site and no diversions are needed. The reserve pit is proposed on the north and has a slight fill on the northeast corner. With the planned 15 foot outer bench and the spoils pile beyond the bench, it should be stable. A major tributary of Sand Wash is about 1/2 mile to the east of the site and the White River about 3 mile down drainage. The selected site appears to be suitable for enlarging a pad, drilling and operating the proposed wells and is the only site in the immediate area.

Both the surface and minerals are owned by SITLA.

### **Surface Use Plan**

**Current Surface Use** 

Grazing Wildlfe Habitat Existing Well Pad

New Road Miles Well Pad Src Const Material Surface Formation

0 Width 312 Length 455 Onsite UNTA

**Ancillary Facilities** N

### **Waste Management Plan Adequate?**

### **Environmental Parameters**

Affected Floodplains and/or Wetlands N

Flora / Fauna

12/27/2010 Page 1

Vegetation is a poor desert shrub type, which includes greasewood, broom snakeweed, shadscale and halogeton.

Antelope, sheep during the winter, rabbits, coyotes, and small mammals, birds and raptors.

### **Soil Type and Characteristics**

Surface soils are shallow and rocky

**Erosion Issues** N

**Sedimentation Issues** N

Site Stability Issues N

**Drainage Diverson Required?** N

Berm Required? N

**Erosion Sedimentation Control Required?** N

Paleo Survey Run? Paleo Potental Observed? N Cultural Survey Run? Y Cultural Resources?

### **Reserve Pit**

Site-Specific Factors	Site R	anking	
Distance to Groundwater (feet)	100 to 200	5	
Distance to Surface Water (feet)	>1000	0	
Dist. Nearest Municipal Well (ft)	>5280	0	
Distance to Other Wells (feet)		20	
Native Soil Type	Mod permeability	10	
Fluid Type	Fresh Water	5	
Drill Cuttings	Normal Rock	0	
<b>Annual Precipitation (inches)</b>		0	
Affected Populations			
<b>Presence Nearby Utility Conduits</b>	Not Present	0	
	Final Score	40	1 Sensitivity Level

### **Characteristics / Requirements**

The proposed reserve pit is 120' x 220' x 12' deep located mostly in a cut on the northwest corner of the location. Kerr McGee plans a 30-mil liner with a double felt sub-liner.

Closed Loop Mud Required? N Liner Required? Y Liner Thickness 30 Pit Underlayment Required? Y

# **Other Observations / Comments**

Floyd Bartlett (DOGM), Sheila Wopsock, Clay Einerson, Lovell Young, Grizz Oleen, Charles Chase, Colby Sutton, Doyle Holmes, Claudia Sass, (Kerr McGee), Mitch Batty, John Slaugh, (Timberline Engineering and Land Surveying), Jim Davis (SITLA) and Ben Williams, (UDWR).

Floyd Bartlett 11/30/2010

Evaluator Date / Time

12/27/2010 Page 2

12/27/2010

# **Application for Permit to Drill Statement of Basis**

Utah Division of Oil, Gas and Mining

Page 1

APD No	API WellNo	Status	Well Type	Surf Owner CBM
3153	43047513400000	LOCKED	GW	S No
Operator	KERR-MCGEE OIL & GAS O	NSHORE, L.P.	Surface Owner-APD	
Well Name	NBU 921-35A4CS		Unit	NATURAL BUTTES
Field	NATURAL BUTTES		Type of Work	DRILL
Location	NENE 35 9S 21E S 52	24 FNL 445 FEL	GPS Coord (UTM) 62	7169E 4428421N

### **Geologic Statement of Basis**

Kerr McGee proposes to set 2,310' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 2,000'. A search of Division of Water Rights records shows one water well within a 10,000 foot radius of the center of Section 35. The well is listed as 2,640 feet deep and used for drilling water. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. The proposed casing and cement should adequately protect. Any usable ground water.

Brad Hill 12/15/2010 **APD Evaluator Date / Time** 

### **Surface Statement of Basis**

The general area is within the Natural Buttes Unit in the lower portion of the Sand Wash Drainage of Uintah, County, approximately 36 air miles and 43.0 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads to the site. Topography of the Sand Wash area is characterized by broad open flats dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs, furnishing water for antelope or livestock.

The NBU 921-35A pad will be created by slightly enlarging the existing pad of the CIGE 541 and NBU 921-35AT gas wells. It will be primarily enlarged to the east and north. Four gas wells, to be directionally drilled, will be added. They are the NBU 921-35B1BS, 921-35A1BS, 921-35B4BS and 921-35A4CS. The pad begins at the foot of an existing vertical cut into a side-hill on the south. It extends east into a gentle area. The pad will be widened from 47 to 60 feet between Corners 8 and 9. No drainages intersect the site and no diversions are needed. The reserve pit is proposed on the north and has a slight fill on the northeast corner. With the planned 15 foot outer bench and the spoils pile beyond the bench, it should be stable. A major tributary of Sand Wash is about 1/2 mile to the east of the site and the White River about 3 mile down drainage. The selected site appears to be suitable for enlarging a pad, drilling and operating the proposed wells and is the only site in the immediate area.

Both the surface and minerals are owned by SITLA. Jim Davis represented SITLA at the pre-site investigation. Mr. Davis had no concerns pertaining to this location excepted as covered above. SITLA provided a seed mix to be used when reclaiming the site.

Ben Williams represented the Utah Division of Wildlife Resources. Mr. Williams stated the area is classified as crucial yearlong antelope habitat but recommended no restrictions for this species. No other wildlife will be significantly affected.

12/27/2010

# **Application for Permit to Drill Statement of Basis**

**Utah Division of Oil, Gas and Mining** 

Page 2

Floyd Bartlett 11/30/2010
Onsite Evaluator Date / Time

### **Conditions of Approval / Application for Permit to Drill**

**Category** Condition

Pits A synthetic liner with a minimum thickness of 30 mils with a double felt subliner shall be properly installed and

maintained in the reserve pit.

Surface The reserve pit shall be fenced upon completion of drilling operations.

# WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED:** 11/18/2010 **API NO. ASSIGNED:** 43047513400000

WELL NAME: NBU 921-35A4CS

**PHONE NUMBER:** 720 929-6156 **OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)

**CONTACT:** Danielle Piernot

PROPOSED LOCATION: NENE 35 090S 210E **Permit Tech Review:** 

> SURFACE: 0524 FNL 0445 FEL **Engineering Review:**

> **BOTTOM:** 1079 FNL 0494 FEL Geology Review:

**COUNTY: UINTAH** 

**LATITUDE: 39.99830 LONGITUDE:** -109.51030

**UTM SURF EASTINGS: 627169.00 NORTHINGS: 4428421.00** 

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 3 - State

**LEASE NUMBER: ML 22582** PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

**SURFACE OWNER: 3 - State COALBED METHANE: NO** 

**RECEIVED AND/OR REVIEWED: LOCATION AND SITING:** 

✓ PLAT R649-2-3.

Unit: NATURAL BUTTES Bond: STATE/FEE - 22013542

**Potash** R649-3-2. General

Oil Shale 190-3 R649-3-3. Exception

Oil Shale 190-13 **Drilling Unit** 

Board Cause No: Cause 173-14 Water Permit: Permit #43-8496

Effective Date: 12/2/1999 **RDCC Review:** 

Siting: 460' Fr U Bdry & Uncommitted Tracts **Fee Surface Agreement** 

✓ Intent to Commingle R649-3-11. Directional Drill

**Commingling Approved** 

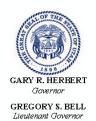
Oil Shale 190-5

**Comments:** Presite Completed

Stipulations:

3 - Commingling - ddoucet 5 - Statement of Basis - bhill 15 - Directional - dmason 17 - Oil Shale 190-5(b) - dmason 25 - Surface Casing - hmacdonald

API Well No: 43047513400000



# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

# **Permit To Drill**

\*\*\*\*\*

**Well Name:** NBU 921-35A4CS **API Well Number:** 43047513400000

**Lease Number:** ML 22582 **Surface Owner:** STATE **Approval Date:** 12/27/2010

### **Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

### **Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

# **Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

#### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

### **Conditions of Approval:**

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Surface casing shall be cemented to the surface.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

API Well No: 43047513400000

# **Additional Approvals:**

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan contact Dustin Doucet
- Significant plug back of the well contact Dustin Doucet
- Plug and abandonment of the well contact Dustin Doucet

### **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well contact Carol Daniels OR
- submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at https://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment contact Dan Jarvis
- 24 hours prior to cementing or testing casing contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well contact Dan Jarvis

### **Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 office
- Dustin Doucet 801-538-5281 office

801-733-0983 - after office hours

• Dan Jarvis 801-538-5338 - office

801-231-8956 - after office hours

# **Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) due prior to implementation
- Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
- Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

Approved By:

For John Rogers Associate Director, Oil & Gas

	STATE OF UTAH		FORM 9
	5.LEASE DESIGNATION AND SERIAL NUMBER: ML 22582		
SUNDI	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:		
	sals to drill new wells, significantly deepe ugged wells, or to drill horizontal laterals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-35A4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047513400000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PH Street, Suite 600, Denver, CO, 80217 377	<b>10NE NUMBER:</b> 79 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0524 FNL 0445 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH: Qtr/Qtr: NENE Section: 35	IP, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian:	: S	STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	CHANGE WELL NAME
Approximate date work will start:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
SUBSEQUENT REPORT Date of Work Completion:	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	☐ PLUG AND ABANDON	PLUG BACK
	☐ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
SPUD REPORT  Date of Spud:	REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
3/17/2011	□ TUBING REPAIR	□ VENT OR FLARE	☐ WATER DISPOSAL
DRILLING REPORT	□ water shutoff	☐ SI TA STATUS EXTENSION	APD EXTENSION
Report Date:	WILDCAT WELL DETERMINATION	OTHER	OTHER:
12 DECEDING PROPOSED OF CO			<u> </u>
MIRU PETE MARTIN RAN 14" 36.7# SCH	PHONE NUMBEI	CONDUCTOR HOLE TO 40'.  CMT W/28 SX READY MIX 2011 AT 8:00 HRS.  Oi  FOF	
Andy Lytle	720 929-6100	Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 3/17/2011	

Print Form

# BLM - Vernal Field Office - Notification Form

Opei	rator <u>KERR-McGEE OIL &amp; GA</u>	S Rig Nam	e/# <u>BUC</u>	KET RIG
Subr	nitted By ANDY LYTLE	Phone Nur	nber <u>720</u>	.929.6100
Well	Name/Number NBU 921-35A	4CS		
Qtr/0	Qtr <u>NENE</u> Section 35	Township 9	<u>s</u> R	lange <u>21E</u>
Leas	e Serial Number ML-22582			
API	Number <u>4304751340</u>			
Spuc	<u>1 Notice</u> – Spud is the initial	snuddina c	of the we	ll not drilling
•	pelow a casing string.	Space in g	i die we	ii, not urilling
	Date/Time <u>03/17/2011</u>	08:00 HRS	AM 🗌	РМ
<u>Casiı</u> time	ng – Please report time casi s.	ng run star	ts, not c	ementing
<b>7</b>	Surface Casing		RECE	IVED
	Intermediate Casing		MAR 1	4 2011
	Production Casing			40.6 MININO
	Liner		DIV. OF OIL, G	AS & MINING
	Other			
	Date/Time <u>04/26/2011</u>	08:00 HRS	АМ 🗌	РМ
BOP	E			
	= Initial BOPE test at surface	casing poir	nt	
	BOPE test at intermediate	<b>J</b> .		
	30 day BOPE test	5 1		
	Other			
	Date/Time		АМ 🗌	РМ
Rem	arks estimated date and time. Plea	SE CONTACT KENN	Y GATHINGS	AT
12E 70	1 7049 OD LOVEL VOIDIC DE 425 020 000		<del></del>	

### STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

	ENTITY ACTION FORM							
Operator:	KERR McGEE OIL & G	AS ONSHORE LP	Operator Account Number:	N <sup>2995</sup>				
Address:	P.O. Box 173779							
	city DENVER		<del></del>					
	state CO	<sub>zip</sub> 80217	Phone Number:	(720) 929-6100				

Well 1

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751340	NBU 921-35A4CS		NENE	35	098	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	Spud Date		Entity Assignment Effective Date		
B	99999	2900	3	3/17/2011		3/23/11	
Comments: MIRU SPUI	J PETE MARTIN BUCKI D WELL LOCATION ON	ET RIG. WS 77 I 03/17/2011 AT 8:00	1 V D HRS. &	BHL.	= NE	NE	

Well 2

API Number Well Name				Q Sec Twp		Rng County		
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date		
Comments:								

# Well 3

API Number	Well Name			Number Well Name QQ Sec Twp				Twp	Rng County	
Action Code	Current Entity Number	New Entity Number	Spud Date			Entity Assignment Effective Date				
Comments:			<u> </u>							

### **ACTION CODES:**

- A Establish new entity for new well (single well only)
- B Add new well to existing entity (group or unit well)
- C Re-assign well from one existing entity to another existing entity
- D Re-assign well from one existing entity to a new entity
- E Other (Explain in 'comments' section)

AN	DY	LY	TL	Æ

Name (Please Print)

Signature

**REGULATORY ANALYST** 

3/17/2011 Date

**RECEIVED** 

MAR 1 7 2011

Sundry Number: 13997 API Well Number: 43047513400000

			FORM 9
	STATE OF UTAH		
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	G	5.LEASE DESIGNATION AND SERIAL NUMBER: ML 22582
SUNDE	Y NOTICES AND REPORTS ON	WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	als to drill new wells, significantly deepen exis gged wells, or to drill horizontal laterals. Use A		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-35A4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047513400000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE N treet, Suite 600, Denver, CO, 80217 3779	UMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0524 FNL 0445 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENE Section: 35	<b>P, RANGE, MERIDIAN:</b> Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICATE N	ATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	☐ CASING REPAIR
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME
Approximate date work will start:	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
☐ SUBSEQUENT REPORT	□ DEEPEN □	FRACTURE TREAT	□ NEW CONSTRUCTION
Date of Work Completion:		PLUG AND ABANDON	□ PLUG BACK
		RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:			
		SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
✓ DRILLING REPORT		VENT OR FLARE	☐ WATER DISPOSAL
Report Date:	□ WATER SHUTOFF	SI TA STATUS EXTENSION	☐ APD EXTENSION
4/1/2011	☐ WILDCAT WELL DETERMINATION ☐	OTHER	OTHER:
MIRU AIR RIG ON M. RAN 8 5/8" 28# 1J55	MPLETED OPERATIONS. Clearly show all pertiner ARCH 30, 2011. DRILLED 11" SU SURFACE CASING. CEMENTED S FARY RIG. DETAILS OF CEMENT J WITH WELL COMPLETION REPO	RAFCE HOLE TO 2535'. SURFACE CASING. WELL OB WILL BE INCLUDE RT. Oil	_
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 4/4/2011	

# BLM - Vernal Field Office - Notification Form

Operator <u>KERR MCGEE</u> Rig N	Name/# <u>H&amp;P 311</u>
Submitted By <b>DOUG BARONE</b> Ph	none Number 435- 790-1884
Well Name/Number NBU 921-35	
Qtr/Qtr NE/NE Section 35	
Lease Serial Number ML 22582	· · · · · · · · · · · · · · · · · · ·
-	
API Number43-047-51340	
Spud Notice – Spud is the initial spout below a casing string.	pudding of the well, not drilling
Date/Time	AM PM
Casing – Please report time casing times.	g run starts, not cementing
Surface Casing	RECEIVED
Intermediate Casing	
Production Casing	MAY 2 3 2011
Liner	THE OF CIL. GAS & MINING
Other	
Date/Time AM	PM
BOPE	
Initial BOPE test at surface c	asing point
BOPE test at intermediate ca	5 .
30 day BOPE test	em.5 pem.e
Other	
Date/Time _5/2/23/2011	<u>06:00</u> AM ⊠ PM □
Remarks	

Sundry Number: 15403 API Well Number: 43047513400000

	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MININ	NG	5.LEASE DESIGNATION AND SERIAL NUMBER: ML 22582
SUND	RY NOTICES AND REPORTS O	N WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	sals to drill new wells, significantly deepen ex ugged wells, or to drill horizontal laterals. Use		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-35A4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047513400000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONE treet, Suite 600, Denver, CO, 80217 3779	NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0524 FNL 0445 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSH	IP, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
MIRU ROTARY RIG. 2011. RAN 4-1/2" 11.6# P110 CSG FR RELEASED H&P RIG 3 JOB WILL BE INCLU WAITING ON FINAL	CHANGE TO PREVIOUS PLANS  CHANGE WELL STATUS  DEEPEN  OPERATOR CHANGE  PRODUCTION START OR RESUME  REPERFORATE CURRENT FORMATION  TUBING REPAIR  WATER SHUTOFF  WILDCAT WELL DETERMINATION  SMPLETED OPERATIONS. Clearly show all pertining the pertining of the pertining the pertining of the pertini	5' TO 9672' ON MAY 28, IG TO 9395'. RAN 4 ½" ) PRODUCTION CASING HAS. DETAILS OF CEMENTION REPORT. WELL ISIDE	Accepted by the Itah Division of Itas and Mining
NAME (PLEASE PRINT)	PHONE NUMBER	TITLE	
Andy Lytle  SIGNATURE	720 929-6100	Regulatory Analyst  DATE	
N/A		5/31/2011	

# **BLM - Vernal Field Office - Notification Form**

Operator <u>KERR MCGEE</u> Rig	Name/# <u>H&amp;P 311</u>
Submitted By PAT CAIN Phone	Number 435- 790-1884
Well Name/Number NBU 921-3	
Qtr/Qtr NE/NE Section 35	
Lease Serial Number ML 22582	
API Number43-047-51340_	
Spud Notice – Spud is the initial out below a casing string.	spudding of the well, not drilling
Date/Time	AM
<u>Casing</u> – Please report time casi times.	ng run starts, not cementing
Surface Casing	RECEIVED
Intermediate Casing	- <del></del>
Production Casing	MAY 3 1 2011
Liner	DIV. OF OIL, GAS & MINING
Other	
Other	
Date/Time <u>5/29/2011</u>	
BOPE	
Initial BOPE test at surface	casing point
	<b>9</b> 1
BOPE test at intermediate of	asing point
30 day BOPE test	
Other	
Date/Time	AM PM
Remarks	

Sundry Number: 17606 API Well Number: 43047513400000

			FORM
	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINI		5.LEASE DESIGNATION AND SERIAL NUMBER: ML 22582
SUNDF	RY NOTICES AND REPORTS (	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	sals to drill new wells, significantly deepen e igged wells, or to drill horizontal laterals. Us		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-35A4CS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047513400000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHON treet, Suite 600, Denver, CO, 80217 3779	E NUMBER: 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0524 FNL 0445 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: NENE Section: 35	(P, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	ACIDIZE	ALTER CASING	CASING REPAIR
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME
Approximate date work will start:	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	CONVERT WELL TYPE
☐ SUBSEQUENT REPORT	DEEPEN [	FRACTURE TREAT	□ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	□ PLUG BACK
	✓ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
SPUD REPORT Date of Spud:	_	_	
	☐ REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
✓ DRILLING REPORT	☐ TUBING REPAIR	☐ VENT OR FLARE ☐	WATER DISPOSAL
Report Date:	☐ WATER SHUTOFF	SI TA STATUS EXTENSION	APD EXTENSION
8/15/2011	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:
THE SUBJECT WELL PM. THE CHRONOLO	MPLETED OPERATIONS. Clearly show all perti WAS PLACED ON PRODUCTION OGICAL WELL HISTORY WILL B WELL COMPLETION REPOR	ON 08/15/2011 AT 3:00 E SUBMITTED WITH THE RT. A U OII FOR	
NAME (PLEASE PRINT) Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 8/16/2011	

# RECEIVED

DEPARTMENT DIVISION OF

AMENDED REPORT	FORM 8
(highlight changes)	
E LEAGE OFFICE LATION AND OFFICE	111111111111111111111111111111111111111

TATE OF UTAH TOF NATURAL RESOURCES FOIL. GAS AND MINING	JUN 2 8 2012	AMENDED REPORT FC (highlight changes)  5. LEASE DESIGNATION AND SERIAL NUMB	ORM 8
- · · · · · · · · · · · · · · · · · · ·	DIV. OF OIL, GAS & MINING	ML 22582	EK.
RECOMPLETION REP		6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
GAS DRY D	OTHER	7. UNIT or CA AGREEMENT NAME	

WELL COMPLETION OR F 1a. TYPE OF WELL: WELL UTU63047A b. TYPE OF WORK: WELL NAME and NUMBER HORIZ. DEEP-DIFF. RESVR. RE-ENTRY NBU 921-35A4CS N OTHER 2. NAME OF OPERATOR 9. API NUMBER: KERR MCGEE OIL & GAS ONSHORE, L.P. 4304751340 3. ADDRESS OF OPERATOR: PHONE NUMBER: 10 FIELD AND POOL, OR WILDCAT 80217 CO (720) 929-6100 **NATURAL BUTTES** P.O.BOX 173779 **DENVER** 4. LOCATION OF WELL (FOOTAGES) QTR/QTR, SECTION, TOWNSHIP, RANGE, AT SURFACE: NENE 524 FNL 445 FEL S35, T9S, R21E NENE 35 9S 21E S AT TOP PRODUCING INTERVAL REPORTED BELOW: NENE 1058 FNL 504 FEL S35, T9S, R21E AT TOTAL DEPTH: NENE 1071 FNL 494 FEL S35, T9S, R21E BHL 64 HSM 12. COUNTY 13. STATE **UTAH** UINTAH 14. DATE SPUDDED: 15. DATE T.D. REACHED: 16. DATE COMPLETED 17. ELEVATIONS (DF, RKB, RT, GL): ABANDONED | READY TO PRODUCE 7 3/17/2011 5/28/2011 8/15/2011 4990 GL 18. TOTAL DEPTH: MD 9.672 19. PLUG BACK T.D.: MD 9.616 21. DEPTH BRIDGE 20. IF MULTIPLE COMPLETIONS, HOW MANY? \* TVD 9.628 TVD 9.572 TVD 22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each) RCBL-CHI TRIPLE COMBO-RMTE WAS WELL CORED? NO 🗸 YES (Submit analysis) WAS DST RUN? NO 🗸 YES [ (Submit report) DIRECTIONAL SURVEY? NO YES 🗸 (Submit copy) 24. CASING AND LINER RECORD (Report all strings set in well) STAGE CEMENTER CEMENT TYPE & SLURRY BOTTOM (MD) HOLE SIZE SIZE/GRADE WEIGHT (#/ft.) TOP (MD) AMOUNT PULLED CEMENT TOP \*\* 20" 14" STL 36.7# 40 28 28# 2.523 11 8 5/8" **IJ-55** 975 0 7 7/8" 9,395 4 1/2" 1-80 11.6# 260 1,534 7 7/8" P110 11.6# 9,395 9,661 4 1/2" 25. TUBING RECORD DEPTH SET (MD) PACKER SET (MD) DEPTH SET (MD) PACKER SET (MD) SIZE SIZE SIZE DEPTH SET (MD) PACKER SET (MD) 2 3/8" 8.941 26. PRODUCING INTERVALS 27. PERFORATION RECORD FORMATION NAME TOP (MD) BOTTOM (MD) TOP (TVD) BOTTOM (TVD) INTERVAL (Top/Bot - MD) SIZE NO. HOLES PERFORATION STATUS (A) WASATCH 7,332 7,334 7,332 Open 🗸 7,334 0.36 8 Squeezed (B) MESAVERDE 7.438 9.538 7.438 9.538 0.36 205 Open 1 Squeezed Open (C) Squeezed (D) Open Squeezed 28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND TYPE OF MATERIAL 7332 - 9538 PUMP 10,942 BBLS SLICK H2O & 227,420 LBS SAND 29. ENCLOSED ATTACHMENTS: 30. WELL STATUS: GEOLOGIC REPORT DST REPORT ✓ DIRECTIONAL SURVEY ELECTRICAL/MECHANICAL LOGS PROD SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION CORE ANALYSIS OTHER:

(CONTINUED ON BACK)

(5/2000)

31.	IN	ŧΠΑL	PRO	DUC	ΠQΝ
0.47		CIDO	T 00/	20110	en:

### INTERVAL A (As shown in Item #26)

DATE FIRST PR											
011510011	ODUCED:	TEST DA	ΓE.			TEST PRODUCTION	PRODUCTION OIL - BBL: GAS - MCF: WAT			PROD. METHOD:	
8/15/2011		8/22/	2011		2	24	RATES: →	0	2,472	650	FLOWING
HOKE SIZE:	TBG. PRESS.	CSG. PR	SS. API GR	AVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION	OIL - BBL:	GAS MCF:	WATER - BBL:	INTERVAL STATE
20/64	2,100	3,00	00				RATES: →	0	2,472	650	PROD
					INT	ERVAL B (As sho	wn in item #26)				
OATE FIRST PR	ODUCED:	TEST DA	TE:		HOURS TESTED	1	TEST PRODUCTION RATES: →	OIL - BBL:	GAS - MCF:	WATER BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG. PRI	ESS. API GF	AVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL - BBL:	GAS – MCF:	WATER BBL:	INTERVAL STATE
<u> </u>					INTI	ERVAL C (As sho	wn in item #26)				T
DATE FIRST PR	ODUCED:	TEST DA	TE:		HOURS TESTED	<b>)</b> ;	TEST PRODUCTION RATES: →	OIL - BBL:	GAS MCF	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG PRI	ESS. API GF	AVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATE
	<del> </del>				INT	ERVAL D (As sho	wn in item #26)	<u> </u>			
DATE FIRST PR	ODUCED:	TEST DA	TE:		HOURS TESTED	):	TEST PRODUCTION RATES: →	OIL – BBL:	GAS MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE:	TBG. PRESS.	CSG PR	ESS. API GF	RAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATE
32. DISPOSITIO	ON OF GAS (So	ld, Used for F	uel, Vented, Et	c.)			<u> </u>	<b>J.</b>	.,, <b></b>		1
33. SUMMARY	OF POROUS Z	ONES (Includ	e Aquifers):				34	4. FORMATION	(Log) MARKERS:		
Show all importatested, cushion of	ent zones of porc used, time tool o	osity and conte	ents thereof: Cor nd shut-in press	ed interva ures and	als and all drill-stem recoveries.	tests, including de	epth interval				
		Тор	Bottom	Τ				· · · · · · · · · · · · · · · · · · ·			Тор
Formati	on	(MD)	(MD)		Descrip	tions, Contents, etc	; 	Name			Measured Depth)
	IVER	1,427									

Attached is the chronological well history, perforation report and final survey.

36.	! hereby c	ertify that the	e foregoing an	d attached in	formation is	s complete and	d correct as	determined from	m all available	records
						•				

NAME (PLEASE PRINT) ANDREW LYTLE SIGNATURE

TITLE REGULATORY ANALYST

This report must be submitted within 30 days of

- completing or plugging a new well
- drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- · drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to:

Utah Division of Oil, Gas and Mining 1594 West North Temple, Suite 1210

Box 145801

Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

801-359-3940 Fax:

# **Operation Summary Report**

Well: NBU 921-35A4CS [GREEN]	Spud Conductor: 3/17/2011	Spud Date: 3/30/2011
Project: UTAH-UINTAH	Site: NBU 921-35A PAD	Rig Name No: H&P 311/311, CAPSTAR 310/310
Event: DRILLING	Start Date: 3/6/2011	End Date: 5/30/2011

Active Datum: RKB @5,015.01ft (above Mean Sea

UWI: NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0

ı	(lava	

vel)											
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation			
3/30/2011	13:30 - 17:00	3.50	DRLSUR	01	С	Р		SKID RIG TO WELL 4/4 NBU 921-35A4CS			
	17:00 - 18:00	1.00	DRLSUR	14	A	P		WELD ON CONDUCTOR AND RIG UP FLOW LINE			
	18:00 - 22;00	4.00	DRLSUR	08	Α	Z		WORK ON SWIVEL HOSE AND WORK ON HYDRAULIC BOOM CYLINDER			
	22:00 - 22:30	0.50	DRLSUR	06	A	P		PICK UP NEW MUD MOTOR AND BIT PREPARE TO SPUD			
	22:30 - 0:00	1.50	DRLSUR	02	С	P		SPUD WELL DRILL 11" HOLE FROM 40' - 225' WOB 8-18 ROT 45-55 DHR 99 GPM 600 NO LOSSES AVE ROP 123 FT HR			
3/31/2011	0:00 - 3:00	3.00	DRLSUR	06	Α	P		TOOH INSTALL DIRECTIONAL TOOLS ORIENT TO MUD MOTOR AND TIH REPLACE ROT RUBBER			
	3:00 - 13:30	10,50	DRLSUR	02	С	Р		DRILL 11" HOLE F/ 225' - 1454' AVE ROP 117 FT HR WOB 18-22 ROT 45-55 DHR 99 GPM 600 NO LOSSES LAST SURVEY 9.88 DEG 187.61 AZI			
	13:30 - 14:00	0.50	DRLSUR	07	Α	Р		DAILY RIG SERVICE			
	14:00 - 0:00	10.00	DRLSUR	02	С	Р		DRILL 11" HOLE F/ 1454' - 2326' AVE ROP 87 FT HR WOB 18-22 ROT 45-55 DHR 99 GPM 600 70% LOSSES LAST SURVEY 11.69 DEG 194.11 AZI			
4/1/2011	0:00 - 2:30	2.50	DRLSUR	02	С	P		DRILL 11" HOLE F/ 2326' - 2535' T.D. AVE ROP 87 FT HR WOB 18-22 ROT 45-55 DHR 99 GPM 600 70% LOSSES LAST SURVEY 11.69 DEG 194.11 AZI			
	2:30 - 3:00	0.50	DRLSUR	05	С	Р		CIRCULATE AND CONDTION MUD PRIOR TO LDDS			
	3:00 - 7:00	4.00	DRLSUR	06	Α	Р		TOOH LAYING DOWN BREAK DOWN DIRECTIONAL TOOLS AND MUD MOTOR AND BIT			
	7:00 - 9:30	2.50	DRLSUR	12	С	Р		RIG UPA ND RUN 8.625 28# J55 CASING SHOE AT 2507' BAFFLE AT 2463'			
	9:30 - 13:30	4.00	DRLSUR					HOLD SAFETY MEETING W/ SUPERIOR WELL SERVICES CEMENTERS. INSTALL CEMENT HEAD ON TOP OF LANDING JT. PRESSURE TEST LINE TO 2000 PSI. PUMP 50 BBLS OF WATER AHEAD, PUMP 20 BBLS OF GEL WATER. PUMP 200 SX OF 11#, 3.52 YD, 23 GAL/SK HI FILL LEAD, PUMP 225 SX OF 15.8# 1.15 YD, 5 GAL/SK TAIL PREM. CLASS G CEMENT. DROP PLUG ON FLY, DISPLACE W/ 156 BBLS OF WATER. 490 PSI OF LIFT @ 2 BBLS/MIN RATE. 40 BBLS OF LEAD TO SURFACE. BUMP PLUG W/ 900 PSI. FLOAT HELD. PUMP 200 SX OF 15.8# PREMIUM 3% CALC CEMENT DOWN 1" DOWN BACK SIDE. TOTAL DOWN BACK SIDW 1000			

9/27/2011 2:12:14PM

# **Operation Summary Report**

				Opera	tion a	oumma	гу кероп	
Well: NBU 921-3	5A4CS [GREEN]		Spud Cor	nductor: 3	3/17/2011	l	Spud Date: 3/3	0/2011
Project: UTAH-U	INTAH		Site: NBU	921-35A	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310
Event: DRILLING	}		Start Date	: 3/6/201	11			End Date: 5/30/2011
	KB @5,015.01ft (abov	/e Mean Sea					/0/0/26/PM/N/524	4/E/0/445/0/0
Level)	T:	Duration	Phase	Code	Sub	P/U	MD From	Operation
Date	Time Start-End	Duration (hr)	Fridae	Occe	Code	1,70	(ft)	Optication
	13:30 - 13:30	0.00	DRLSUR	J		l	(	CONDUCTOR CASING:
								Cond. Depth set:40
								Cement sx used:28
								SPUD DATE/TIME:3/30/2011 22:30
								SURFACE HOLE:
								Surface From depth:40
								Surface To depth:2,535
}								Total SURFACE hours: 24.50
								Surface Casing size:8-5/8"
								# of casing joints ran:57
								Casing set MD:2,507.0 # sx of cement:200/225/550
								Cement blend (ppg:)11/15.8/15/8
								Cement yield (ft3/sk):3.38/1.15/1.15
								# of bbls to surface:0
								Describe cement issues: NO CMT TO SURFACE
5 100 10044	4:00 - 5:00	1.00	DRLPRO	01	С	Р	•	Describe hole issues:85% RETURNS @ 2100' SKID RIG, CENTER AND LEVEL RIG
5/23/2011	4:00 - 5:00 5:00 - 6:00	1.00	DRLPRO	01	В	P		SLIP & CUT DRILL LINE
	6:00 - 7:30	1.50	DRLPRO	14	A	P		NU BOP
	7:30 - 12:00	4.50	DRLPRO	15	A	, P		PRESSURE TEST PIPE RAMS, BLIND RAMS, IBOP,
								FLOOR VALVE, KILL LINE, & KILL LINE VALVES, BOP WING VALVES, HCR VALVE, CHOKE LINE INNER & OUTER CHOKE VALVES, & MANIFOLD 250 PSI LOW/ 5 MINUTES, 5K HIGH FOR 10 MINUTES, TEST ANNULAR 250 LOW/5 MINUTES, 2500 HIGH/10 MINUTES, TEST SUPER CHOKE & CSG TO 1500 PSI FOR 30 MINUTES. FUNCTION TEST CLOSING UNIT.
	12:00 - 12:30	0.50	DRLPRO	01	В	P		INSTALL WEAR BUSHING
	12:30 - 13:00	0.50	DRLPRO	07	Α	P		LUBRICATE RIG
	13:00 - 14:30	1.50	DRLPRO	06	A	Р		PU Q506F W/ 6X16 JETS, MU BHA , ORIENT DIRECTIONAL TOOLS, TIH, TAG CMT AT 2309
1	14:30 - 16:30	2.00	DRLPRO	02	F			DRILL OUT CMT & SHOE
	16:30 - 0:00	7.50	DRLPRO	02	D			DRILLED 2551 TO 3590, 'IN HRS, FPH. MADE 9 SLIDES, 123 TOTAL FEET IN 2.17 HOURS. WOB WAS 15-23K, PUMP #1 AT 110 SPM, 495 GPM, MOTOR TURNING AT 138 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 178 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 350-500 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1658/1248 PSI. ON/OFF BOTTOM TORQUE WAS 6/3 K. PU/SO/ROT WAS 138/97/112. CIRCULATING THE RESERVE PIT.
5/24/2011	0:00 - 8:00	8.00	DRLPRO	02	D	Р		DRILLED 3590 TO 4940,1350 'IN 8 HRS, 168 FPH. MADE 5 SLIDES, 89 TOTAL FEET IN 1.41 HOURS. WOB WAS 15-23K, PUMP #1 AT 110 SPM, 495 GPM, MOTOR TURNING AT 138 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 178 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 350-500 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1745/1422 PSI. ON/OFF BOTTOM TORQUE WAS 8/4 K. PU/SO/ROT WAS 145/109/126. CIRCULATING THE RESERVE PIT.

Well: NBU 921-	35A4CS [GREEN]	Spud Co	nductor: 3	3/17/2011		Spud Date: 3/30/2011				
Project: UTAH-L	HATAIL		Site: NBL	921-35A	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310		
vent: DRILLIN	Start Date	e: 3/6/201	1			End Date: 5/30/2011				
active Datum: R .evel)	RKB @5,015.01ft (abo		UWI: NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0							
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
	8:00 - 16:30 16:30 - 17:00	8.50 0.50	DRLPRO	02 07	D	P		DRILLED 4940 TO 6131, 1191' IN 8.5 HRS, 140 FPH. MADE 3 SLIDES, 37 TOTAL FEET IN .83 HOURS. WOB WAS 15-23K, PUMP #1 AT 110 SPM, 495 GPM, MOTOR TURNING AT 138 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 178 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 350-500 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1807/1622 PSI. ON/OFF BOTTOM TORQUE WAS 8/4 K. PU/SO/ROT WAS 177/126/149. CIRCULATING THE RESERVE PIT. LUBRICATE RIG		
	17:00 - 0:00	7.00	DRLPRO	02	D	P		DRILLED 6131 TO 6720,589 ' IN 7 HRS, 84 FPH.		
								MADE 1 SLIDE, 16 TOTAL FEET IN .67 HOURS. WOB WAS 15-23K, PUMP #1 AT 110 SPM, 495 GPM, MOTOR TURNING AT 138 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 178 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 350-500 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1760/1390 PSI. ON/OFF BOTTOM TORQUE WAS 9/6 K. PU/SO/ROT WAS 190/130/157. CIRCULATING THE RESERVE PIT.		
5/25/2011	0:00 - 4:00	4.00	DRLPRO	02	ם	Р		DRILLED 6720'-6987, 267' IN 4 HRS, 66.8 FPH.  100% ROTATING. WOB WAS 18-20K, PUMP #1 AT 95 SPM, 428 GPM, MOTOR TURNING AT 98 RPM WITH TOP DRIVE AT 45 RPM FOR A TOTAL OF 143 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 200-300 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1700/1370 PSI. ON/OFF BOTTOM TORQUE WAS 10/9 K. PU/SO/ROT WAS 200/133/160.  MW-9.0, VIS-34. LOSING 5-10 BPH, SLOWED THE PUMPS DOWN TO TRY AND SLOW DOWN THE LOSES.		
	4:00 - 5:00	1.00	DRLPRO	05	В	Р		LOST ALL RETURNS, SLOWED PUMPS DOWN AND STARTED ADDING LCM. INCREASED LCM TO 12% AND SLOWLY RAMPED UP PUMP STROKES, 100% RETURNS.		
	5:00 - 11:30	6.50	DRLPRO	02	D	Р		DRILLED 6987'-7358', 371' IN 6.5 HRS, 57 FPH.  100% ROTATING. WOB WAS 18-20K, PUMP #1 AT  110 SPM, 495 GPM, MOTOR TURNING AT 114 RPM WITH TOP DRIVE AT 45 RPM FOR A TOTAL OF 159 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS  200-300 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1900/1600 PSI. ON/OFF BOTTOM TORQUE WAS 11/10 K. PU/SO/ROT WAS 201/139/169.  MW-9.7, VIS-34 WITH 12% LCM.		
	11:30 - 12:30	1.00	DRLPRO	05	В	P		LOST ALL RETURNS, SLOWED PUMPS DOWN AND STARTED ADDING LCM. INCREASED LCM TO 20% AND SLOWLY RAMPED UP PUMP STROKES, 100% RETURNS.		

9/27/2011 2:12:14PM

Veil: NBU 921-3	SA4CS [GREEN]	Spud Cor	nductor: 3	/17/2011		Spud Date: 3/30/2011					
Project: UTAH-U	JINTAH		Site: NBL	921-35A	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310			
vent: DRILLING	3		Start Date	e: 3/6/201	1	T		End Date: 5/30/2011			
Active Datum: R .evel)	KB @5,015.01ft (abo		UWI: NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0								
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation			
	12:30 - 17:30	5.00	DRLPRO	02	D	P		DRILLED 7358'-7546', 188' IN 5 HRS, 37.6 FPH. MADE 1 SLIDE, 20' IN 50 MINUTES SO 24 FPH. WHEN WE RESUMED DRILLING WE WERE CLOSE TO THE TOP OF THE MESA VERDE SO WE SLOWED THE PUMPS DOWN TO 90 SPM. WOB WAS 18-21K, PUMP #1 AT 90 SPM, 405 GPM, MOTOR TURNING AT 93 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 133 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 200-300 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1650/1450 PSI. ON/OFF BOTTOM TORQUE WAS 6/7 K. PU/SO/ROT WAS 203/144/166. MW-10.1, VIS-34 WITH 20% LCM.			
	17:30 - 18:00	0.50	DRLPRO	07	Α	Р		RIG SERVICE.			
5/26/2011	18:00 - 0:00 0:00 - 6:00	6.00	DRLPRO	02	D	P		DRILLED 7546'-7830', 284' IN 6 HRS, 47.3 FPH.  100% ROTATING. WOB WAS 18-22K, PUMP #2 AT  90 SPM, 405 GPM. MOTOR TURNING AT 93 RPM  WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 133  RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS  250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE  WAS 1800/1530 PSI. ON/OFF BOTTOM TORQUE  WAS 9/9 K. PU/SO/ROT WAS 210/150/170.  MW-10.3, VIS-34 WITH 20% LCM. RAISING MW  VERY SLOWLY. SEEPAGE LOSES.  DRILLED 7830'-8112', 282' IN 6 HRS, 47 FPH. MADE  1 SLIDE, 15' IN 30 MINUTES, 7.5 FPH. WOB WAS  18-22K, PUMP #2 AT 90 SPM, 405 GPM, MOTOR  TURNING AT 93 RPM WITH TOP DRIVE AT 40 RPM  FOR A TOTAL OF 133 RPM AT THE BIT.			
	6:00 - 14:00	9.00	DRLPRO	02	D	Р		DIFFERENTIAL PRESSURE WAS 250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 1900/1650 PSI. ON/OFF BOTTOM TORQUE WAS 10/7 K. PU/SO/ROT WAS 220/155/175. MW-10.6, VIS-34 WITH 20% LCM. RAISING MW VERY SLOWLY. SEEPAGE LOSES.			
	6:00 - 14:00	8.00	DILLING	02	U	ī		DRILLED 8112'-8518', 406' IN 8 HRS, 50.8 FPH. MADE 1 SLIDE, 22' IN 45 MINUTES SO 29.3 FPH. WOB WAS 18-22K, PUMP #2 AT 90 SPM, 405 GPM, MOTOR TURNING AT 93 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 133 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 2000/1750 PSI. ON/OFF BOTTOM TORQUE WAS 9/9 K. PU/SO/ROT WAS 220/157/179. MW-11.0, VIS-36 WITH 20% LCM. RAISING MW VERY SLOWLY. SEEPAGE LOSES.			
	14:00 - 18:00	4.00	DRLPRO	05	В	Р		LOST ALL RETURNS AT 8518', SLOWED PUMPS DOWN AND STARTED ADDING LCM. INCREASED LCM TO 30% AND SLOWLY RAMPED UP PUMP STROKES, 100% RETURNS. LOST 510 BBLS.			

				,	s ROC		ry Report						
Well: NBU 921-	35A4CS [GREEN]		Spud Cor	Spud Conductor: 3/17/2011									
Project: UTAH-L			Site: NBU	921-35/	A PAD		<u>-</u>	Rig Name No: H&P 311/311, CAPSTAR 310/310					
Event: DRILLIN	G		Start Date	e: 3/6/201	11	T		End Date: 5/30/2011					
Active Datum: R				S/21/E/35	5/0/0/26/PM/N/52								
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation					
5/27/2011	18:00 - 0:00 0:00 - 0:30	6.00	DRLPRO	02	D	P		DRILLED 8516'-8773', 257' IN 6 HRS, 42.8 FPH.  100% ROTATING'. WOB WAS 18-22K, PUMP #2 AT  90 SPM, 405 GPM, MOTOR TURNING AT 93 RPM  WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 133  RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS  250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE  WAS 1950/1790 PSI. ON/OFF BOTTOM TORQUE  WAS 9/9 K. PU/SO/ROT WAS 225/160/180.  MW-11.3, VIS-36 WITH 20% LCM. RAISING MW  VERY SLOWLY. SEEPAGE LOSES. TRIED TO TAKE  A SURVEY AT 8584', COULD NOT GET A SIGNAL  FROM THE EFIELD TOOL, DRILLED ANOTHER STD  AND TRIED ANOTHER SURVEY AT 8678', AGAIN NO  SIGNAL SO DRILLED ANOTHER STD TO 8773' AND  TRIED AGAIN, NO SIGNAL. WE TRIED PUMPING NUT  PLUG SWEEPS, CLEAN MUD SWEEPS TO TRY AND  POSSIBLY CLEAN OFF THE MWD ANTENNA, NO  SUCCESS, TALKED WITH JIM M AND WE DECIDED  TO TOH AND REPLACE MWD. STILL HAVE 884' TO  DRILL, BASED ON THE LAST SURVEY WE COULD  HAVE BUILT UP TO 4 DEGREES BEFORE WE WERE  OUT OF THE TARGET. PUT WELL ON THE BUSTER  AT 8635' WITH A 11.3 PPG AND 15-20' FLARE,  STARTED RAISING MW, RAISED MW TO 11.9 PPG  AND TOOK WELL OFF THE BUSTER, NO FLARE.  RIG SERVICE					
	0:30 - 12:00	11.50	DRLPRO	05	В	Z		STARTED CIRC/COND MUD FOR TRIP OUT. WELL WAS ON THE BUSTER WITH A 10-15' FLARE SO STARTED TO RAISE MW. FLARE QUIT AT 11.8 PPG. WHEN WE GOT TO AN 11.9 PPG, LOST ALL RETURNS, STARTED INCREASING LCM CONTENT AND BUILDING VOLUME, GOT BACK 25% RETURNS, INCREASED TO 75%. STARTED STAGING UP PUMPS BUT IT KEPT LOSING. INCREASED LCM CONTENT TO 34%. STAGED UP TO 75 SPM WITH ONLY SLIGHT SEEPAGE LOSES. MW AT 12.0 PPG, 36 VIS WITH 34% LCM. LOST 600 BBLS.					
	12:00 - 12:30	0.50	DRLPRO	05	С	Z		FLOW CHECKED WELL, NO FLOW.					
	12:30 - 16:30	4.00	DRLPRO	06	Н	Z		PULLED 5 STDS, PUMPED SLUG AND TRIPPED OUT OF HOLE. NO TITE SPOTS OR OVERPULLS. FLOW CHECKED AT THE SHOE, NO FLOW.					
	16:30 - 18:00	1.50	DRLPRO	06	Н	Z	·	PULL EFIELD TOOL, DID NOT THAT MUCH LCM PACKED AROUND IT. TESTED TOOL ONCE WE GOT THE LCM OFF OF IT, WORKED. BROKE BIT OFF AND LD MM. PICKED UP NEW HUNTING 7:8 LOBE, 3.3 HR, 1.5 DEGREE BEND, 0.16 RPG MUD MOTOR WITH A HUGHES Q506F BIT WITH 6-16S, SERIAL # 7134372. SCRIBED MOTOR. CHECKED OPERATION OF DIRECTIONAL TOOLS AND MOTOR.					

9/27/2011 2:12:14PM

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### **Operation Summary Report**

				Opera	tion S	iumma	ry Report	
Well: NBU 921-3	5A4CS [GREEN	١]	Spud Co	nductor: 3	/17/2011		Spud Date: 3/3	0/2011
Project: UTAH-L	IINTAH		Site: NBL	J 921-35A	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310
Event: DRILLING	3		Start Dat	e: 3/6/201				End Date: 5/30/2011
Active Datum: R Level)	KB @5,015.01ft	(above Mean Sea		UWI: NE	E/NE/0/9/	S/21/E/35	5/0/0/26/PM/N/524	4/E/0/445/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	18:00 - 23:3 23:30 - 0:0		DRLPRO	02	D	Z		TRIPPED IN THE HOLE, NEVER SAW ANYTHING, STRAIGHT TO BOTTOM. STOPPED AND SURVEY AT THE THREE DEPTHS WE DID NOT SURVEY PREVIOUSLY. BROKE CIRCULATION AT 2600', 5000', 7500'. WASHED AND REAMED THE LAST 3 STDS DOWN, NO HARD WASHING OR REAMING. ONCE WE GOT CIRCULATING WE HAD A 10-15' FLARE FOR 15 MINUTES. FLARE WAS ABOUT 400 STROKES PRIOR TO BOTTOMS UP. DRILLED 8773'-8785', 12' IN .5 HRS, 24 FPH. 100% ROTATING'. WOB WAS 18-20K, PUMP #1 AT 90 SPM, 405 GPM, MOTOR TURNING AT 65 RPM WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 105 RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS 250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE WAS 2150/1800 PSI. ON/OFF BOTTOM TORQUE WAS 11/9 K. PU/SO/ROT WAS 220/150/178. MW-12.0, VIS-36 WITH 34% LCM. STARTED TO HAVE SEEPAGE SO THAT IS WHY WE BACKED THE
5/28/2011	0:00 - 6:0	6.00	DRLPRO	02	D	Р		SPM DOWN.  DRILLED 8785'-8994', 209' IN 6 HRS, 34.8 FPH.  100% ROTATING. WOB WAS 20-22K, PUMP #1 AT  90 SPM, 405 GPM, MOTOR TURNING AT 65 RPM  WITH TOP DRIVE AT 40 RPM FOR A TOTAL OF 105  RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS  250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE  WAS 2200/1900 PSI. ON/OFF BOTTOM TORQUE  WAS 11/9 K. PU/SO/ROT WAS 220/150/178.  MW-12.0, VIS-36 WITH 34% LCM. STARTED TO  HAVE SEEPAGE SO THAT IS WHY WE BACKED THE  SPM DOWN. WILL TRY RAMPING STROKES UP.
	6:00 - 19:	00 13.00	DRLPRO	02	D	P		DRILLED 8994-9672', 678' IN 13 HRS, 52.2 FPH.  100% ROTATING. WOB WAS 23-25K, PUMP #1 AT  90 SPM, 405 GPM, MOTOR TURNING AT 65 RPM  WITH TOP DRIVE AT 48 RPM FOR A TOTAL OF 113  RPM AT THE BIT. DIFFERENTIAL PRESSURE WAS  250-350 PSI. ON/OFF BOTTOM PUMP PRESSURE  WAS 2350/2060 PSI. ON/OFF BOTTOM TORQUE  WAS 11/9 K. PU/SO/ROT WAS 225/168/187.  MW-12.2, VIS-42 WITH 34% LCM. STARTED TO  HAVE SEEPAGE SO THAT IS WHY WE BACKED THE  SPM DOWN. TRIED RAMPING STROKES UP TO 110  UNTIL WE WOULD START SEEPING THEN BACK  THEN DOWN AGAIN.
	19:00 - 19	:30 0.50	DRLPRO	07	Α	Р		RIG SERVICE.
	19:30 - 21	:30 2.00	DRLPRO	05	С	Р		CIRC 2 BOTTOMS UP, NO FLARE OR GAS. SLIGHT LOSSES. 12.2 PPG, 42 VIS WITH 34% LCM. FLOW CHECKED WELL, NO FLOW.
	21:30 - 0:	00 2.50	DRLPRO	06	E	Р		PUMPED SLUG AND STARTED TRIPPING OUT OF THE HOLE. NO TITE SPOTS OR OVERPULLS.
5/29/2011	0:00 - 5:	00 5.00	DRLPRO	06	D	Р		CONTINUED WIPER TRIP. NO TITE SPOTS OR OVERPULLS. FLOW CHECKED WELL AT CASING SHOE. TRIPPED BACK IN THE HOLE, NO TITE SPOTS. BROKE CIRCULATION AT 2500', 5000' AND 7500'. WENT STRAIGHT TO BOTTOM, NO FILL.

### **Operation Summary Report**

Spud Conductor: 3/17/2011 Spud Date: 3/30/2011 Well: NBU 921-35A4CS [GREEN] Project: UTAH-UINTAH Site: NBU 921-35A PAD Rig Name No: H&P 311/311, CAPSTAR 310/310 Event: DRILLING Start Date: 3/6/2011 End Date: 5/30/2011 UWI: NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0 Active Datum: RKB @5,015.01ft (above Mean Sea Level) Date Phase Code Sub PAI MD From Operation Time Duration Start-End (hr) Code (ft) 5:00 - 7:30 2.50 DRLPRO 05 С Р CIRCULATED TWO BOTTOMS UP, PUT WELL ON GAS BUSTER WITH A 10-20' FLARE FOR 30 MINUTES. SAW NO GAS ON THE SECOND BOTTOMS UP. 12.2 PPG, 45 VIS WITH 30% LCM. RIGGING UP LAY DOWN CREW 7:30 CSG D - 17:30 10.00 06 LAID DOWN DRILLPIPE, NO TITE SPOTS OR OVERPULLS. WELL TAKING PROPER FILL. LD DIRECTIONAL TOOLS, MUD MOTOR AND BIT. DRLPRO 17:30 - 18:00 0.50 07 Α RIG SERVICE р 18:00 - 18:30 0.50 CSG 06 J PULLED WEAR BUSHING. 18:30 - 19:00 0.50 CSG 12 Α P RIGGED UP CASING RUNNING CREW. C 19:00 - 0:00 5.00 CSG 12 4.5" CASING WAS RUN AS FOLLOWS- MADE UP WITH THREAD LOCK, SHOE, SHOE TRACK-HCP110 AND FLOAT COLLAR. INSTALLED CENTRALIZER ON SHOE TRACK. RAN 5 MORE JTS HCP110, BTC, 11.6#, R3, RAN 160 JTS 180, BTC, 11.6#, R3. TOTAL JOINTS RAN 166 JTS OF 4.5", 11.6#, BTC, R3, SET 21' MARKER JOINTS AT 7518' AND 4847'. CASING AT 6800' AT REPORT TIME. FILLED AND CIRCULATE CASING AT 2350', 6100'. - 2:00 CSG C 5/30/2011 0:00 2.00 12 CONTINUED RUNNING 4.5" PRODUCTION CASING. 4.5" CASING WAS RUN AS FOLLOWS- MADE UP WITH THREAD LOCK, SHOE, SHOE TRACK-HCP110 AND FLOAT COLLAR. INSTALLED CENTRALIZER. ON SHOE TRACK. RAN 5 MORE JTS HCP110, BTC. 11.6#, R3, RAN 224 JTS 180, BTC, 11.6#, R3. TOTAL JOINTS RAN 230 JTS OF 4.5", 11.6#, BTC, R3. SET 21' MARKER JOINTS AT 7287' AND 4695'. SET CASING AT 9661' WITH FLOAT COLLAR AT 9617'. FILLED AND CIRCULATE CASING AT 2500', 6050'. 2:00 - 3:30 1.50 CSG 12 Α FILLED CASING AND STARTED CIRCULATING AT 360 GPM AND 1000 PSI. RIGGED DOWN CASERS AND STARTED RIGGING UP CEMENTERS. HAD TO PUT WELL ON GAS BUSTER, HAD 10-20' FLARE FOR 15 MINUTES. DID NOT ANY GAS ON THE

SECOND BOTTOMS UP.

PRESSURE TESTED LINES TO 5000 PSI. PUMPED 40 BBLS OF H20 SPACER AHEAD, PUMPED 185 BBLS (490 SX OF 12.3#, 2.12 CFT/SX, 11.38 GAL/SK) LEAD PREMIUM LIGHT CEMENT. PUMPED 243 BBLS (1044 SX OF 14.3#, 1.31 YD, 5.90 GAL/SK) POZ PREMIUM 50/50 TAIL CEMENT. SHUT DOWN AND WASHED LINES, DROP 4.5" TOP PLUG, PUMP 149.5 BBLS OF H20 TREATED WITH BIOCIDE AND CLAY INHIBITOR. BUMPED PLUG AT 2650 PSI,

PRESSURED UP CSG TO 3291 PSI AND HELD FOR 5 MIN. CHECKED FLOATS, FLOATS HELD, FLOWED BACK 2.00 BBLS. EST TOC TAIL @ 4200', LEAD @ 300'. HAD 100% RETURNS EXCEPT FOR THE LAST 10 BBLS AND GOT BACK 40 BBLS WATER AND 20

PICK UP BOP STACK AND SET C22 SLIPS WITH 100K. CUT OFF CASING AND LD JOINT.

BBLS CEMENT BACK TO SURFACE.

RIGGED DOWN CEMENTERS.

9/27/2011 2:12:14PM

5:30

6:00

6:30

- 6:00

~ 6:30

- 7:00

0.50

0.50

0.50

3:30

- 5:30

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CSG

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				U	S ROCI	KIES RE	GION			
				Opera	ition S	umma	ry Report			
Well: NBU 921-	35A4CS [GREEN]		Spud Co	nductor: 3	3/17/2011		Spud Date: 3/3	0/2011		
Project: UTAH-	UINTAH		Site: NBI	J 921-35 <i>A</i>	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310		
Event: DRILLIN	IG		Start Dat	e: 3/6/201	11			End Date: 5/30/2011		
Active Datum: F Level)	RKB @5,015.01ft (abo	ve Mean Sea		UWI: NI	E/NE/0/9/	S/21/E/35	/0/0/26/PM/N/52	4/E/0/445/0/0		
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
	7:00 - 10:00	3.00	CSG	01	E	Р		RIGGED DOWN, CLEANED MUD TANKS AND PREPARED TO SKID. RELEASED RIG ON MONDAY MAY 30TH AT 1000 HRS.		

9/27/2011 2:12:14PM

				Operat				
	35A4CS [GREEN]			nductor: 3/		······	Spud Date: 3/3	30/2011
roject: UTAH-L	JINTAH		Site: NBI	J 921-35A I	PAD			Rig Name No: H&P 311/311, CAPSTAR 310/310
vent: DRILLING	G		Start Dat	e: 3/6/2011				End Date: 5/30/2011
ctive Datum: R	RKB @5,015.01ft (abo	ve Mean Sea		UW: NE/	NE/0/9/	S/21/E/3	5/0/0/26/PM/N/52	24/E/0/445/0/0
evel)	,							
Date	Time	Duration	Phase	Code	Sub	P/U	MD From	Operation
	Start-End	(hr)			Code		(ft)	
	10:00 - 10:00	0.00	CSG		••••••		<del></del>	CONDUCTOR CASING:
								Cond. Depth set:40
								Cement sx used:28
								SPUD DATE/TIME:3/30/2011 22:30
								SURFACE HOLE:11
								Surface From depth:40
								Surface To depth:2,535
								Total SURFACE hours:24.50
								Surface Casing size:8.625"
								# of casing joints ran:57
								Casing set MD:2,507.0
								# sx of cement:200/225/550
								Cement blend (ppg:)11/15.8/15.8
								Cement yield (ft3/sk):3.38/1.15/1.15
								# of bbls to surface:0
								Describe cement issues:NO CMT TO SURFACE
								Describe hole issues:85% RETURNS AT 2100'
								PRODUCTION:7.875
								Rig Move/Skid start date/time:5/23/2011 4:00
								Rig Move/Skid finish date/time:5/23/2011 5:00
								Total MOVE hours:1.0
								Prod Rig Spud date/time:5/23/2011 14:30
								Rig Release date/time:5/30/2011 10:00
								Total SPUD to RR hours:163.5
								Planned depth MD9,662
								Planned depth TVD9,603
								Actual MD:9,672
								Actual TVD:9,628
								Open Wells \$:
								AFE \$:
								Open wells \$/ft:
								PRODUCTION HOLE:
								Prod. From depth:2,551
								Prod. To depth:9,672
								Total PROD hours: 92
								Log Depth:N/A
								Production Casing size:4 1/2
								# of casing joints ran:229
								Casing set MD:9,661.0
								# sx of cement:490+1044=1534
								Cement blend (ppg:)12.3/14.3
								Cement yield (ft3/sk):2.12/1.31
								Est. TOC (Lead & Tail) or 2 Stage :LEAD 300', TAIL
								4200'
								Describe cement issues:NONE Describe hole issues:NONE
								5 355 NO NOI 195063 NO NE
								DIRECTIONAL INFO:
								KOP:199'
								Max angle: 12.84 @ 2673'
								Departure:549.2'@ 9672

9/27/2011 2:12:14PM

### 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well Information

Well	NBU 921-35A4CS [GREEN]		
Common Name	NBU 921-35A4CS		
Well Name	NBU 921-35A4CS	Wellbore No.	OH
Report No.	1	Report Date	6/17/2011
Project	UTAH-UINTAH	Site	NBU 921-35A PAD
Rig Name/No.		Event	COMPLETION
Start Date	6/17/2011	End Date	6/20/2011
Spud Date	3/30/2011	Active Datum	RKB @5,015.00ft (above Mean Sea Level)
UWI	NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0		

### 1.3 General

Contractor		Job Method	PERFORATE	Supervisor	
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

### 1.4 Initial Conditions

### 1.5 Summary

Fluid Type		Fluid Density	Gross Interval	7,332.0 (ft)-9,538.0 (ft)	Start Date/Time	8/1/2011	12:00AM
Surface Press		Estimate Res Press	No. of Intervals	37	End Date/Time	8/1/2011	12:00AM
TVD Fluid Top		Fluid Head	Total Shots	213	Net Perforation Interval		63.00 (ft)
Hydrostatic Press		Press Difference	Avg Shot Density	3.38 (shot/ft)	Final Surface Pressure		
Balance Cond	NEUTRAL				Final Press Date		

### 2 Intervals

### 2.1 Perforated Interval

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)	17		Add. Shot		Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
12:00AM	IWASATCH/			7,332.0	7,334.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)		Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr	Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
12:00AN	MESAVERDE/		(11)	7,438.0	7,440.0	النسسان		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/			7,492.0	7,494.0	4.00		0.360	EXP/		3.375	90.00		23.00	PRODUCTIO N	
12:00AM	IMESAVERDE/			7,588.0	7,591.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/			7,663.0	7,666.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/			7,741.0	7,744.0	3.00		0.360			3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			7,764.0	7,765.0	3.00		0.360	EXP/		3,375	120.00			PRODUCTIO N	
12:00AN	IMESAVERDE/			7,792.0	7,794.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			7,823.0	7,824.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	IMESAVERDE/			7,851.0	7,852.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AN	MESAVERDE/			7,896.0	7,898.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	MESAVERDE/			7,939.0	7,941.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AN	MESAVERDE/			8,016.0	8,017.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	IMESAVERDE/			8,033.0	8,034.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AN	MESAVERDE/			8,101.0	8,102.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	MESAVERDE/			8,124.0	8,125.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	MESAVERDE/			8,212.0	8,213.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	MESAVERDE/			8,269.0	8,270.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			8,302.0	8,304.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	IMESAVERDE/			8,344.0	8,345.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	IMESAVERDE/			8,364.0	8,366.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AN	IMESAVERDE/			8,398.0	8,399.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top I	(ft)	Shot Density (shot/ft)	Misfires/ Add. Shot	Diamete r (in)	Carr 7	ype /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
12:00AM	MESAVERDE/		1 (10)	8,523.0	8,526.0			0.360	EXP/		3.375	90.00			PRODUCTIO	
12:00AM	MESAVERDE/			8,592.0	8,595.0	4.00		0.360	EXP/		3.375	90.00		23.00	N PRODUCTIO N	
12:00AM	MESAVERDE/			8,743.0	8,746.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			8,798.0	8,800.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			8,835.0	8,836.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			8,873.0	8,875.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			8,992.0	8,994.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			9,036.0	9,037.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			9,086.0	9,088.0	3.00		0.360	EXP/		3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/			9,121.0	9,122.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			9,235.0	9,236.0	3.00		0.360	EXP/		3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/			9,310.0	9,311.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/			9,355.0	9,357.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/			9,414.0	9,416.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/	·		9,537.0	9,538.0	4.00		0.360	EXP/		3.375	90.00			PRODUCTIO N	

### 3 Plots

			0	perat	ion S	umm	ary Repor	t
Well: NBU 921	-35A4CS [GREEN	1}	Spud Co	onductor	: 3/17/20	011	Spud Date: 3/	/30/2011
Project: UTAH	-UINTAH	···	Site: NB	U 921-3	5A PAD			Rig Name No:
Event: COMPL	ETION		Start Da	te: 6/17/	2011			End Date: 6/20/2011
Active Datum: Level)	RKB @5,015.00ft (	above Mean	Sea	UWI: N	IE/NE/0/	9/S/21/E	/35/0/0/26/PM/N	N/524/E/0/445/0/0
Date	Date Time Durati Start-End (hr)		Phase	Code	Sub Code	P/U	MD From (ft)	Operation
6/17/2011	9:00 - 11:00 11:00 - 12:00	2.00 1.00	COMP	46 47	E A	P P		MOVE TO LOCATION, WAIT ON WEST ROC TO FINISH HOOKING UP WELL HEADS RU, ND WH, NU BOP.
6/20/2011	12:00 - 17:00 7:00 - 7:30	5.00	COMP	31 <b>4</b> 8	I	P		PU 3 7/8 BIT & 2 3/8 TBG, RIH TAG FILL @ 180', PU SWIVEL, BRAKE CIRCULATION, C/O TO 3445' SWI,SDFWE HSM. RUNNING PIPE.
Q120/2011	7:30 - 10:30	3.00	COMP	31	1	P		FINISH PU 2 3/8 TBG, TAGED FILL @ 9555' C/O TO PBTD @ 9614'.

Ρ

Р

POOH, LAY DOWN TBG ON FLOAT.

RD, RU ON NEXT WELL OVER.

HSM,

10:30 - 15:00

15:00 - 17:00

7:00 - 7:15

8/1/2011

4.50

2.00

0.25

COMP

COMP

COMP

31

47

48

9/7/2011 3:23:16PM

### **US ROCKIES REGION Operation Summary Report** Spud Date: 3/30/2011 Spud Conductor: 3/17/2011 Well: NBU 921-35A4CS [GREEN] Project: UTAH-UINTAH Site: NBU 921-35A PAD Rig Name No: **Event: COMPLETION** Start Date: 6/17/2011 End Date: 6/20/2011 Active Datum: RKB @5,015.00ft (above Mean Sea UWI: NE/NE/0/9/S/21/E/35/0/0/26/PM/N/524/E/0/445/0/0 Level) Date Duration Code Sub MD From Phase P/U Operation Start-End Code (hr) (ft) 7:15 - 17:00 9.75 COMP 36 P PERF & FRAC FOLLOWING WELL AS PER E DESIGN W/ 30/50 MESH SAND & SLK WTR. ALL CBP'S ARE HALIBURTON 8K CBP'S. REFER TO STIM PJR FOR FLIUD, SAND AND CHEMICL VOLUME PUM'D FRAC STG #1] WHP=1,935#, BRK DN PERFS=3,128#, @=4.8 BPM, INJ RT=50.5, INJ PSI=6,026#, INITIAL ISIP=2,604#, INITIAL FG=.72, FINAL ISIP=2,893#, FINAL FG=.75, AVERAGE RATE=50.3, AVERAGE PRESSURE=5,435#, MAX RATE=50.8, MAX PRESSURE=6,116#, NET PRESSURE INCREASE=289#, 21/24 86% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=9,266', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #2] WHP=470#, BRK DN PERFS=3,338#, @=4.3 BPM, INJ RT=50.3, INJ PSI=5,852#, INITIAL ISIP=2,519#, INITIAL FG=.72, FINAL ISIP=2,909#, FINAL FG=.76, AVERAGE RATE=50.7, AVERAGE PRESSURE=5,352#, MAX RATE=51, MAX PRESSURE=6,027#, NET PRESSURE INCREASE=390#, 21/21 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #31 P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,905', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW FRAC STG #3] WHP=763#, BRK DN PERFS=3,360#, @=4.4 BPM, INJ RT=50,6, INJ PSI=5,568#, INITIAL ISIP=1,675#, INITIAL FG=.63, FINAL ISIP=2,558#, FINAL FG=73., AVERAGE RATE=50.7, AVERAGE PRESSURE=5,370#, MAX RATE=51.3, MAX PRESSURE=5,933#, NET PRESSURE INCREASE=883#, 18/24 75% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,625', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW SWIFN.

9/7/2011 3:23:16PM

8/2/2011

6:45 - 7:00

0.25

COMP

48

HSM, PERF & frac

			C	perat	ion S	umma	ary Repor	<b>t</b>
Well: NBU 92	1-35A4CS [GREEN	<b>1</b> ]	Spud C	onductor	: 3/17/20	011	Spud Date: 3	/30/2011
Project: UTAH	I-UINTAH		Site: NE	3U 921-3	5A PAD			Rig Name No:
Event: COMP	LETION		Start Da	ite: 6/17/	2011			End Date: 6/20/2011
Active Datum: Level)	RKB @5,015.00ft (	above Mean	Sea	UWI: N	E/NE/0/	9/S/21/E/	/35/0/0/26/PM/I	N/524/E/0/445/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:00 - 7:00	0.00	COMP	36	E	Р		FRAC STG #4] WHP=1,884#, BRK DN PERFS=3,470#, @=4.3 BPM, INJ RT=49.5, INJ PSI=4,734#, INITIAL ISIP=2,104#, INITIAL FG=.68, FINAL ISIP=2,721#, FINAL FG=.76, AVERAGE RATE=49.4, AVERAGE PRESSURE=4,557#, MAX RATE=49.8, MAX PRESSURE=5,306#, NET PRESSURE INCREASE=617#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP &
								PERF GUN, SET CBP @=8,429', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #5] WHP=1,230#, BRK DN PERFS=4.6#, @=4.6 BPM, INJ RT=46.9, INJ PSI=6,000#, INITIAL ISIP=2,461#, INITIAL FG=.74, FINAL ISIP=2,750#, FINAL FG=.77, AVERAGE RATE=50.4, AVERAGE PRESSURE=4,878#, MAX RATE=51.1, MAX PRESSURE=6,481#, NET PRESSURE INCREASE=289#, 17/24 71% CALC PERFS OPEN. X OVER TO WIRE LINE
								PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,155', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #6] WHP=1,128#, BRK DN PERFS=2,964#, @=4.2 BPM, INJ RT=48, INJ PSI=5,455#, INITIAL ISIP=1,420#, INITIAL FG=.62, FINAL ISIP=2,265#, FINAL FG=.72, AVERAGE RATE=52.4, AVERAGE PRESSURE=4,922#, MAX RATE=53.3, MAX PRESSURE=6,114#, NET PRESSURE INCREASE=845#, 16/24 66% CALC PERFS OPEN. X OVER TO WIRE LINE
								PERF STG #7] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,882', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #7] WHP=2,208#, BRK DN PERFS=2,177#, @=3.7 BPM, INJ RT=51.4, INJ PSI=4,500#, INITIAL ISIP=1,972#, INITIAL FG=.69, FINAL ISIP=2,273#, FINAL FG=.73, AVERAGE RATE=51.6, AVERAGE PRESSURE=4,314#, MAX RATE=52, MAX PRESSURE=4,993#, NET PRESSURE INCREASE=301#, 24/24 100% CALC PERFS OPEN. X OVER TO WIRE LINE SWIFN.
8/3/2011	7:00 - 7:15	0.25	COMP	48		Р		HSM

9/7/2011 3:23:16PM

3

			O	perat	ion S	umm	ary Repor	t
Well: NBU 921	-35A4CS [GREEN	٠ <u></u>	Spud C	onductor	: 3/17/20	011	Spud Date: 3	/30/2011
Project: UTAH-	-UINTAH		Site: NE	U 921-3	5A PAD			Rig Name No:
Event: COMPL	ETION		Start Da	te: 6/17/	2011			End Date: 6/20/2011
Active Datum: I Level)	RKB @5,015.00ft (	above Mean	Sea	UWI: N	IE/NE/0/	9/S/21/E	/35/0/0/26/PM/	N/524/E/0/445/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:15 - 7:15	0.00	COMP	36	E	Р		PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,696', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW  FRAC STG #8] WHP=2,204#, BRK DN PERFS=3,653#, @=3.4 BPM, INJ RT=44, INJ PSI=5,636#, INITIAL ISIP=2,119#, INITIAL FG=.72, FINAL ISIP=2,307#, FINAL FG=.74, AVERAGE
								RATE=48.3, AVERAGE PRESSURE=5,211#, MAX RATE=49.5, MAX PRESSURE=5,911#, NET PRESSURE INCREASE=188#, 15/24 64% CALC PERFS OPEN. X OVER TO WIRE LINE
								PERF STG #9] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,524', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #9] WHP=1,337#, BRK DN PERFS=2,739#, @=4.2 BPM, INJ RT=47.1, INJ PSI=3,896#, INITIAL ISIP=1,390#, INITIAL FG=.63, FINAL ISIP=2,284#, FINAL FG=.75, AVERAGE RATE=47.4, AVERAGE PRESSURE=3,661#, MAX RATE=47.7, MAX PRESSURE=4,182#, NET PRESSURE INCREASE=894#, 22/24 92% CAL PERFS OPEN, X OVER TO WIRELINE
								SET HALIBURTON 8K CBP FOR TOP KILL @=7,282', RDMO
8/12/2011	6:45 - 7:00	0.25	COMP	48		P		TOTAL FLUID PUMP'D=10,942 BBLS TOTAL SAND PUMP'D=227,420# HSM & JSA W/ROYAL WELL SERVICE.
	7:00 - 14:00	7.00	COMP	31	l	P		MIRU - SPOT EQUIP. WHP = 0 PSI. NDWH, NU BOPS. PREP & TALLY TBG. PU 3 7/8 BIT, POBS & XN NIPPLE. RIH ON 229 JTS NEW 2 3/8 4.7# L80 TBG. TAG FILL @ 7265'. LD 2 JT. RD TBG EQUIP, RU PWR SWVL & PMP. EOT @ 7213'. SWI - SDFWE. PREP TO D/O 9 CBPs ON MONDAY 8/15/11.
8/15/2011	6:45 - 7:00	0.25	COMP	48		Ρ		HSM & JSA W/ROYAL WELL SERVICE.

9/7/2011 3:23:16PM

### **Operation Summary Report**

			C	perat	ion S	umma	ary Repor	t		
Well: NBU 921	-35A4CS [GREEN	N]	Spud C	onductor	3/17/20	11	Spud Date: 3	/30/2011		
Project: UTAH-	-UINTAH		Site: NE	3U 921-3	5A PAD			Rig Name No:		
Event: COMPL	ETION		Start Da	ate: 6/17/	2011			End Date: 6/20/2011		
Active Datum: Level)	RKB @5,015.00ft	(above Mear	Sea	UWI: N	E/NE/0/9	9/S/21/E/	/35/0/0/26/PM/I	N/524/E/0/445/0/0		
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
	7:00 - 16:00	9.00	COMP	44	D	P		WHP = 0 PSI. R/U PWR SWVL & PMP. EST CIRC. PT BOPs TO 3000 PSI & HOLD 15 MIN. (25 PSI LOSS). RIH TAG FILL @ 7265'. C/O SND & D/O CBPs/		
								HALCO CBP @ C/O FILL D/O CBP DIFF PSI FCP		
								CBP #1 @ 7282' 36 FT 07 MIN 0 PSI 0 PSI		
								CBP #2 @ 7524' 36 FT 13 MIN 200 PSI 150 PSI		
								CBP #3 @ 7696' 19 FT 15 MIN 500 PSI 200 PSI CBP #4 @ 7887' 21 ET 11 MIN		
								CBP #4 @ 7887' 31 FT 11 MIN 600 PSI 400 PSI CBP #5 @ 8160' 27 FT 07 MIN		
ı								600 PSI 300 PSI CBP #6 @ 8429' 28 FT 09 MIN		
								400 PSI 1000 PSI CBP #7 @ 8625' 23 FT 07 MIN		
								400 PSI 700 PSI CBP #8 @ 8905' 84 FT 05 MIN		
								100 PSI 950 PSI CBP #9 @ 9266' 30 FT 21 MIN 400 PSI 450 PSI		
								RIH & TAG FILL @ 9576". C/O TO 9613'. (PBTD @ 9614'). FCP = 800 PSI. PMP 20 BBLS TMAC & CIRC WELL CLEAN. R/D PWR SWVL, R/U TBG EQUIP. LD 22 JTS ON FLOAT, (33 TOTAL ON FLOAT). LND TBG ON HNGR W/281 JTS NEW 2 3/8" 4.7# L80 TBG @ 8942.04'. RD FLOOR & TBG EQUIP. ND BOP, DROP BALL, NUWH. PMP OFF BIT W/40 BBLS TMAC @ 1400 PSI. WAIT 30 MIN FOR BIT TO FALL TO BTM. TURN WELL TO F.B.C.		
								KB 25' HANGER 0.83' XN NIPPLE 1.33' TBG 281 JTS = 8913.56' XN NIPPLE @ 8940.05' EOT @ 8940.82' (314 JTS DLVRD - 33 JTS RTND)		
8/16/2011	7:00 -			33	А			TWTR = 11,222 BBLS TWR = 1'530 BBLS TWLTR = 9,692 SICP = 0000 PSI, SITP = 0 PSI. 7 AM FLBK REPORT: CP 3100#, TP 2300#, 20/64"		
								CK, 48 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 2354 BBLS LEFT TO RECOVER: 8868		
8/17/2011	7:00 ~			33	Α			7 AM FLBK REPORT: CP 3150#, TP 2200#, 20/64" CK, 32 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 3286		
8/18/2011	7:00 -			33	Α			BBLS LEFT TO RECOVER: 7936 7 AM FLBK REPORT: CP 3000#, TP 2100#, 20/64" CK, 30 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 4014 BBLS LEFT TO RECOVER: 7208		

9/7/2011 3:23:16PM



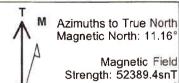
Site: NBU 921-35A Pad

Well: NBU 921-35A4CS

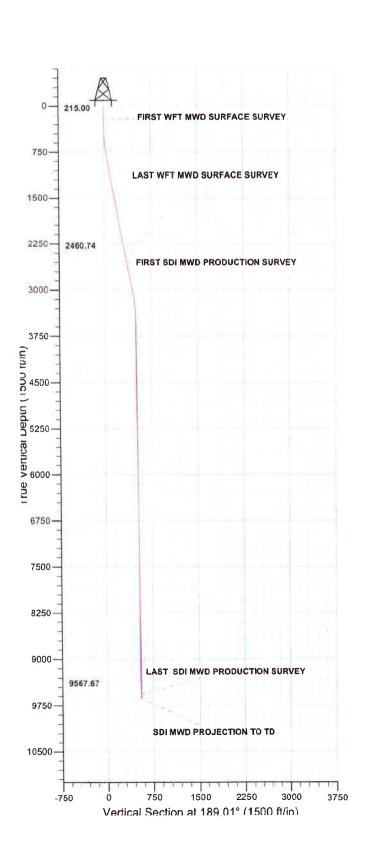
Wellbore: OH Design: OH

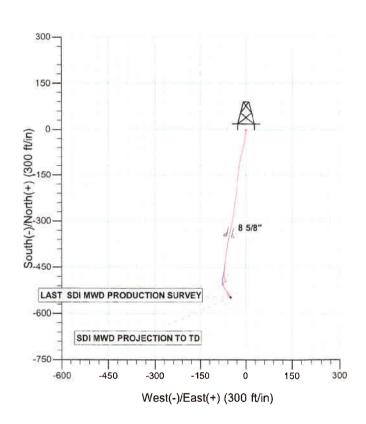


		WEL	L DETAILS: NBU	921-35A4CS		
		GL 499	0 & KB 25' @ 501	5.00ft (HP 311)		
+N/-S 0.00	+E/-W 0.00	Northing 14528927.69	Easting 2057614.08	Latittude 39° 59' 54.038 N	Longitude 109° 30' 37.386 W	



Dip Angle: 65.88° Date: 10/27/2010 Model: IGRF2010





### PROJECT DETAILS: Uintah County, UT UTM12

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsold: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SEC 35 T9S R21E
System Datum: Mean Sea Level



# Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12 NBU 921-35A Pad NBU 921-35A4CS

OH

Design: OH

## **Standard Survey Report**

08 June, 2011







Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference:

Databasa:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311)

GL 4990 & KB 25' @ 5015.00ft (HP 311)

North Reference:

Survey Calculation Method:

Minimum Curvature EDM5000-RobertS-Local

Project

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

System Datum:

Mean Sea Level

True

Geo Datum:

NAD 1927 - Western US

Map Zone:

Zone 12N (114 W to 108 W)

Site

NBU 921-35A Pad, SEC 35 T9S R21E

Site Position:

Northing:

From:

Lat/Long

Easting:

14,528,933.77 usft 2,057,584.54 usft

Latitude:

39° 59' 54.103 N Longitude:

**Position Uncertainty:** 

0.00 ft

Slot Radius:

13.200 in

**Grid Convergence:** 

109° 30' 37.764 W 0.96°

NBU 921-35A4CS, 524' FNL 445' FEL

**Well Position** 

Well

+N/-S +E/-W 0.00 ft

Northing:

14,528,927.70 usft

Latitude:

39° 59' 54.038 N

**Position Uncertainty** 

0.00 ft

Easting:

2,057,614.07 usft

Longitude:

109° 30' 37.386 W

0.00 ft

Wellhead Elevation:

ft

Ground Level:

4,990.00 ft

Wellbore

ОН

Magnetics

Model Name

Sample Date

Declination (°)

Dip Angle (°)

Field Strength

(nT)

IGRF2010

10/27/2010

11.16

65.88

52,389

Design

ОН

Audit Notes: Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

189.01

Vertical Section:

Depth From (TVD) (ft)

+N/-S (ft)

+E/-W

Direction

(ft)

0.00

0.00

0.00

(°)

Survey Program

Date 06/08/2011

From (ft)

To (ft)

Survey (Wellbore)

**Tool Name** 

Description

16.00 2,578.00 2,491.00 Survey # WEATHERFORD MWD SURFA 9,672.00 Survey #2 SDI MWD PRODUCTION (OH) MWD MWD SDI MWD - Standard MWD - Standard ver 1.0.1

Survey

Managemad			Vertical			Vertical	Ongles	Build	T
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Dogleg Rate (°/100ft)	Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.00	0.00	0.00	16.00	0.00	0.00	0.00	0.00	0.00	0.00
215.00	0.36	101.16	215.00	-0.12	0.61	0.02	0.18	0.18	0.00
FIRST WFT	MWD SURFACE	SURVEY							
307.00	1.67	152.01	306.98	-1.36	1.53	1.11	1.60	1.42	55.27
400.00	2.73	186.72	399.92	-4.76	1.90	4.40	1.78	1.14	37.32
494.00	3.88	202.49	493.76	-9.92	0.42	9.73	1.55	1.22	16.78
589.00	4.75	196.24	588.49	-16.67	-1.91	16.76	1.04	0.92	-6.58
685.00	6.75	187.24	684.01	-26.08	-3.73	26.34	2.28	2.08	-9.38
780.00	8.13	186.49	778.20	-38.29	-5.19	38.63	1.46	1.45	-0.79





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore:

ОН

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311) GL 4990 & KB 25' @ 5015.00ft (HP 311)

True

Minimum Curvature

:	OH				Database:			DM5000-Robe		
Measu	red			Vertical			Vertical	Dogleg	Build	Turn
Dept	h	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(ft)		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
87	75.00	9.19	193.99	872.12	-52.33	-7.78	52.90	1.63	1.12	7.89
96	69.00	10.56	191.49	964.73	-68.05	-11.32	68.99	1.53	1.46	-2.66
	64.00	10.88	193.36	1,058.07	-85.31	-15.12	86.62	0.50	0.34	1.97
	59.00	11.06	191.99	1,151.33	-102.95	-19.09	104.66	0.33	0.19	-1.44
	54.00	10.38	188.11	1,244.68	-120.33	-22.19	122.32	1.04	-0.72	-4.08
	49.00	10.63	185.24	1,338.09	-137.53	-24.19	139.62	0.61	0.26	-3.02
1,3	+3.00	10.03	103.24	1,550.05	-137.33	-24.13	139.02	0.01	0.26	-3.02
1,44	44.00	9.88	187.61	1,431.57	-154.33	-26.07	156.51	0.91	-0.79	2.49
1,54	40.00	10.56	184.86	1,526.04	-171.26	-27.91	173.52	0.87	0.71	-2.86
1,6	34.00	10.75	186.36	1,618.42	-188.56	-29.61	190.87	0.36	0.20	1.60
	28.00	9.88	186.24	1,710.90	-205.29	-31.46	207.68	0.93	-0.93	-0.13
	22.00	10.06	190.11	1,803.48	-221.39	-33.78	223.95	0.74	0.19	4.12
4.0	10.00	40.05	100 44	1 907 00	220.00	20.00	240.07	0.07	0.00	4.54
	18.00	10.25	189.11	1,897.98	-238.08	-36.60	240.87	0.27	0.20	-1.04
	12.00	10.13	185.11	1,990.50	-254.57	-38.66	257.48	0.76	-0.13	-4.26
	07.00	10.50	185.11	2,083.96	-271.51	-40.18	274.45	0.39	0.39	0.00
	03.00	10.50	187.36	2,178.36	-288.90	-42.07	291.92	0.43	0.00	2.34
2,2	98.00	11.38	193.99	2,271.63	-306.58	-45.45	309.91	1.61	0.93	6.98
2,3	93.00	11.69	194.11	2,364.71	-325.01	-50.06	328.84	0.33	0.33	0.13
2.4	91.00	11.35	192.32	2,460.74	-344.06	-54.54	348.35	0.50	-0.35	-1.83
LAST	WFT M	WD SURFACE		·						
	78.00	10.55	189.86	2,546.16	-360.27	-57.73	364.86	1.06	-0.92	-2.83
		WD PRODUCTION								
	73.00	12.84	190.13	2,639.18	-379.23	-61.08	384.12	2.41	2.41	0.28
	67.00	11.78	187.05	2,731.02	-399.04	-64.09	404.15	1.33	-1.13	-3.28
_,,	01.00	11.10	137.00	2,701.02	300.04	· • · · · · · · · · · · · · · · · · · ·	-104.10	1.00	-1.10	-5.20
2,8	61.00	12.40	187.31	2,822.93	-418.57	-66.55	423.83	0.66	0.66	0.28
2,9	56.00	10.20	185.73	2,916.08	-437.06	-68.69	442.42	2.34	-2.32	-1.66
3,0	50.00	9.41	185.47	3,008.71	-452.99	-70.25	458.40	0.84	-0.84	-0.28
3,1	44.00	7.56	182.13	3,101.68	-466.82	-71.22	472.21	2.04	-1.97	-3.55
	39.00	5.98	175.80	3,196.01	-478.00	-71.09	483.24	1.84	-1.66	-6.66
2.2	33.00	4.13	162.18	3,289.65	-486.11	-69.69	491.02	2.33	-1.97	-14.49
	28.00	3.17	132.64	3,384.46	-48 <del>3</del> .11	-66.71	495.53	2.33 2.19	-1.97 -1.01	-31.09
			186.13							
	22.00	1.83		3,478.38	-494.40 406.10	-64.96 67.10	498.47	2.71	-1.43 0.76	56.90
	16.00	2.54	264.26	3,572.33	-496.10	-67.19	500.50	2.99	0.76	83.12
3,7	11.00	2.35	251.56	3,667.24	-496.93	-71.14	501.93	0.60	-0.20	-13.37
3,8	305.00	0.62	246.02	3,761.21	-497.74	-73.43	503.10	1.84	-1.84	-5.89
3,8	399.00	0.61	174.94	3,855.20	-498.45	-73. <b>85</b>	503.86	0.76	-0.01	-75.62
3,8	93.00	1.24	175.69	3,949.19	-499.96	-73.73	505.34	0.67	0.67	0.80
	088.00	0.44	29.02	4,044.19	-500.67	-73.48	505,99	1.71	-0.84	-154.39
	182.00	0.44	37.72	4,138.18	-500.06	-73.08	505.34	0.07	0.00	9.26
	76.00	0.50	400.40	4 000 40	E00.04	70.07	E05 45	0.00	0.40	450.00
	276.00	0.53	182.13	4,232.18	-500.21	-72.87	505.45	0.98	0.10	153.63
	371.00	1.32	188.89	4,327.17	-501.73	-73.06	506.98	0.84	0.83	7.12
	465.00	0.88	299.72	4,421.16	-502.45	-73.85	507.81	1.95	-0.47	117.90
	559.00	0.62	219.30	4,515.15	-502.48	-74.80	508.00	1.05	-0.28	-85.55
4,6	354.00	0.53	185.73	4,610.15	-503.32	-75.17	508.88	0.36	-0.09	-35.34





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design: он ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method: Database:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311) GL 4990 & KB 25' @ 5015.00ft (HP 311)

True

Minimum Curvature

EDM5000-RobertS-Local

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Section (ft)	Rate (°/100ft)	Rate (°/100ft)	Rate (°/100ft)
4,748.00	0.70	176.77	4,704.14	-504.32	-75.18	509.87	0.21	0.18	-9.53
4,842.00	0.79	156.29	4,798.13	-505.49	-74.89	510.98	0.30	0.10	-21.79
4,936.00	1.06	173.34	4,892.12	-506.95	-74.53	512.36	0.41	0.29	18.14
5,031.00	1.23	156.90	4,987.10	-508.76	-74.03	514.07	0.39	0.18	-17.31
5,125.00	1.06	174.92	5,081.09	-510,55	-73.55	515.77	0.42	-0.18	19.17
5,219.00	1.16	173.94	5,175.07	-512.36	-73.38	517.53	0.11	0.11	-1.04
5,314.00	0.53	57.23	5,270.06	-513.08	-72.91	518.17	1.55	-0.66	-122.85
5,408.00	0.24	83.51	5,364.06	-512.82	-72.35	517.83	0.35	-0.31	27.96
5,502.00	0.03	359.07	5,458.06	-512.78	-72.15	517.75	0.25	-0.22	-89.83
5,597.00	0.18	219.74	5,553.06	-512.87	-72.25	517.85	0.21	0.16	-146.66
5,691.00	1.41	144.69	5,647.05	-513.92	-71.67	518.81	1.46	1.31	-79.84
5,785.00	1.23	149.70	5,741.02	-515.74	-70.49	520.42	0.23	-0.19	5.33
5,880.00	1.41	147.59	5,836.00	-517,61	-69.35	522.08	0.20	0.19	-2.22
5,974.00	1.41	159.01	5,929.97	-519.66	-68.32	523.95	0.30	0.00	12.15
6,069.00	1.67	148.38	6,024.94	-521.93	-67.17	526.01	0.41	0.27	-11.19
6,163.00	0.62	144.07	6,118.92	-523,51	-66.16	527.41	1.12	-1.12	-4.59
6,257.00	0.70	144.86	6,212.91	-524.39	-65.53	528.18	0.09	0.09	0.84
6,351.00	0.70	143.63	6,306.90	-525.32	-64.86	529.00	0.02	0.00	-1.31
6,446.00	0.97	146.88	6,401.89	-526.46	-64.07	530.00	0.29	0.28	3.42
6,540.00	1.14	143.46	6,495.88	-527.88	-63.08	531.25	0.19	0.18	-3.64
6,635.00	1.1 <b>4</b>	143.10	6,590.86	-529.40	-61.95	532.57	0.01	0.00	-0.38
6,729.00	0.18	71.65	6,684.85	-530.10	-61.25	533.15	1.17	-1.02	-76.01
6,823.00	0.26	101.97	6,778.85	-530.10	-60.90	533.09	0.15	0.09	32.26
6,917.00	0.26	124.21	6,872.85	-530.26	-60.52	533.20	0.11	0.00	23.66
7,012.00	0.53	136.51	6,967.85	-530.70	-60.04	533.55	0.30	0.28	12.95
7,106.00	0.81	143.16	7,061.84	-531.55	-59.34	534.28	0.31	0.30	7.07
7,201.00	0.62	173.34	7,156.83	-532.59	-58.88	535.24	0.44	-0.20	31.77
7,295.00	0.98	172.35	7,250.82	-533.90	-58.71	536.50	0.38	0.38	-1.05
7,390.00	1.21	173.66	7,345.81	-535.70	-58.49	538.25	0.24	0.24	1.38
7,484.00	0.03	175.11	7,439.80	-536.71	-58.38	539.23	1.26	-1.26	1.54
7,578.00	0.00	171.14	7,533.80	-536.73	-58.38	539.26	0.03	-0.03	0.00
7,673.00	0.35	126.82	7,628.80	-536.91	-58.15	539.39	0.37	0.37	0.00
7,767.00	0.53	121.39	7,722.80	-537.31	-57.55	539.69	0.20	0.19	-5.78
7,862.00	0.30	331.81	7,817.80	-537.32	-57.29	539.66	0.85	-0,24	-157.45
7,956.00	0.09	250.15	7,911.79	-537.12	-57.47	539.50	0.32	-0.22	-86.87
8,050.00	0.47	184.97	8,005.79	-537.53	-57.58	539.92	0.47	0.40	-69.34
8,145.00	0.88	194.26	8,100.79	-538.63	-57.79	541.03	0.45	0.43	9.78
8,239.00	1.06	183.62	8,194.77	-540.20	-58.02	542.62	0.27	0.19	-11.32
8,334.00	0.44	356.06	8,289.77	-540.71	-58.10	543.14	1.58	-0.65	181.52
8,428.00	0.44	1.78	8,383.77	-539.99	-58.12	542.43	0.05	0.00	6.09
8,522.00	0.48	16.00	8,477.76	-539.25	-58.00	541.68	0.13	0.04	15.13
8,616.00	0.53	<b>4</b> 5.81	8,571.76	-538.57	-57.58	540.94	0.28	0.05	31.71
8,711.00	0.53	58.11	8,666.76	-538.03	-56.89	540.30	0.12	0.00	12.95





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design: ОН

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

MD Reference:

North Reference: Survey Calculation Method:

Survey Calculation

Database:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311)

GL 4990 & KB 25' @ 5015.00ft (HP 311)

True

Minimum Curvature EDM5000-RobertS-Local

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,899.00	0.26	84.62	8,854.75	-537.30	-56.00	539.44	0.30	-0.10	55.03
8,993.00	0.62	117.88	8,948.75	-537.52	-55.33	539.55	0.45	0.38	35.38
9,088.00	0.70	147.50	9,043.74	-538.25	-54.57	540.15	0.36	0.08	31.18
9,182.00	0.94	135.78	9,137.73	-539.28	-53.72	541.04	0.31	0.26	-12.47
9,276.00	1.01	166.92	9,231.72	-540.64	-53.00	542.27	0.56	0.07	33.13
9,371.00	0.89	172.81	9,326.71	-542.19	-52.71	543.76	0.16	-0.13	6.20
9,465.00	0.79	153.83	9,420.70	-543.50	-52.34	544.99	0.31	-0.11	-20.19
9,559.00	1.07	136.65	9,514.69	-544.71	-51. <b>4</b> 5	546.05	0.42	0.30	-18.28
9,612.00	1.85	141.61	9,567.67	-545.75	-50.58	546.93	1.49	1.47	9.36
LAST SDIN	WD PRODUCTI	ON SURVEY							
9.672.00	1.85	141.61	9,627,64	-547.26	-49,37	548.24	0.00	0.00	0.00

Measured	Vertical	Local Coo	rdinates	
Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
215.00	215.00	-0.12	0.61	FIRST WFT MWD SURFACE SURVEY
2,491.00	2,460.74	-344.06	-54.54	LAST WFT MWD SURFACE SURVEY
2,578.00	2,546.16	-360.27	-57.73	FIRST SDI MWD PRODUCTION SURVEY
9,612.00	9,567.67	-545.75	-50.58	LAST SDI MWD PRODUCTION SURVEY
9,672.00	9,627.64	-547.26	-49.37	SDI MWD PROJECTION TO TD

Checked By:	Approved By:	Date:	
-			 



# Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12 NBU 921-35A Pad NBU 921-35A4CS

OH

Design: OH

## **Survey Report - Geographic**

08 June, 2011







Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design:

OH ОН

Local Co-ordinate Reference: TVD Reference:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311) GL 4990 & KB 25' @ 5015.00ft (HP 311)

North Reference: True

Survey Calculation Method: Minimum Curvature

Database:

EDM5000-RobertS-Local

Project

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

MD Reference:

Geo Datum:

NAD 1927 - Western US

System Datum:

Mean Sea Level

Map Zone:

Zone 12N (114 W to 108 W)

Site

NBU 921-35A Pad, SEC 35 T9S R21E

Site Position:

Lat/Long

Northing:

14,528,933.77 usft

Latitude:

39° 59' 54.103 N 109° 30' 37,764 W

From:

Easting:

2.057.584.54 usft

Longitude:

Position Uncertainty:

0.00 ft

Slot Radius:

13.200 in

Grid Convergence:

0.96°

Well

NBU 921-35A4CS, 524' FNL 445' FEL

Well Position +N/-S 0.00 ft 0.00 ft

Northing: Easting:

14.528.927.70 usft

Latitude:

39° 59' 54.038 N

**Position Uncertainty** 

0.00 ft

Wellhead Elevation:

2,057,614.07 usft

ft

Longitude: Ground Level: 109° 30' 37.386 W

4,990.00 ft

Wellbore

OH

+E/-W

Magnetics

Model Name

Sample Date

Declination (°)

Dip Angle (°)

Field Strength (nT)

IGRF2010

10/27/2010

11.16

65.88

52,389

Design

ОН

Audit Notes:

Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

Vertical Section:

Depth From (TVD)

06/08/2011

+N/-S

+E/-W

Direction

(ft)

(ft)

(ft)

0.00

0.00

0.00

(°) 189.01

Survey Program

From (ft)

Τo (ft)

Survey (Wellbore)

**Tool Name** 

Description

16.00 2,578.00 2,491.00 Survey # WEATHERFORD MWD SURFA 9,672.00 Survey #2 SDI MWD PRODUCTION (OH) MWD MWD SDI MWD - Standard MWD - Standard ver 1.0.1

urvey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitud <del>e</del>
0.00	0.00	0.00	0.00	0.00	0.00	14,528,927.70	2,057,614.07	39° 59' 54.038 N	109° 30' 37.386 W
16.00	0.00	0.00	16.00	0.00	0.00	14,528,927.70	2,057,614.07	39° 59' 54.038 N	109° 30' 37.386 W
215.00	0.36	101,16	215.00	-0.12	0.61	14,528,927.59	2,057,614.69	39° 59' 54.037 N	109° 30' 37.378 W
FIRST W	FT MWD SUR	RFACE SURVI	≣Y						
307.00	1.67	152.01	306.98	-1.36	1.53	14,528,926.36	2,057,615.62	39° 59' 54.025 N	109° 30' 37.366 W
400.00	2.73	186.72	399.92	-4.76	1.90	14,528,922.97	2,057,616.05	39° 59' 53.991 N	109° 30' 37.361 W
494.00	3.88	202.49	493.76	-9.92	0.42	14,528,917.79	2,057,614.66	39° 59' 53.940 N	109° 30' 37.380 W
589.00	4.75	196.24	588.49	-16.67	-1.91	14,528,911.00	2,057,612.44	39° 59' 53.874 N	109° 30' 37.410 W
685.00	6.75	187.24	684.01	-26.08	-3.73	14,528,901.56	2,057,610.78	39° 59' 53.781 N	109° 30' 37.434 W
780.00	8.13	186.49	778.20	-38.29	-5.19	14,528,889.32	2,057,609.52	39° 59' 53.660 N	109° 30' 37.453 W
875.00	9.19	193.99	872.12	-52,33	-7.78	14,528.875.25	2,057,607,16	39° 59' 53,521 N	109° 30' 37.486 W





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: ОН Design:

ОН

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311)

GL 4990 & KB 25' @ 5015.00ft (HP 311)

True

Minimum Curvature

EDM5000-RobertS-Local

feasured			Vertical			Map	Map		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
969.00	10.56	191.49	964.73	-68.05	-11.32	14,528,859.46	2,057,603.90	39° 59' 53.366 N	109° 30' 37.531
1,064.00	10.88	193.36	1,058.07	-85.31	-15.12	14,528,842.15	2,057,600.38	39° 59' 53,195 N	109° 30' 37.580
1,159.00	11.06	191.99	1,151.33	-102.95	-19.09	14,528,824.45	2,057,596.71	39° 59' 53.021 N	109° 30' 37.63
1,254.00	10.38	188.11	1,244.68	-120.33	-22.19	14,528,807.01	2,057,593.90	39° 59' 52.849 N	109° 30' 37.67
1,349.00	10.63	185,24	1,338.09	-137.53	-24.19	14,528,789.78	2,057,592.18	39° 59′ 52.679 N	109° 30' 37.69
1,444.00	9.88	187.61	1,431.57	-154.33	-26.07	14,528,772.95	2,057,590.58	39° 59' 52.513 N	109° 30' 37.72
1,540.00	10.56	184.86	1,526.04	-171.26	-27.91	14,528,755.99	2,057,589.03	39° 59' 52.345 N	109° 30' 37.74
1,634.00	10.75	186.36	1,618.42	-188.56	-29.61	14,528,738.67	2,057,587.62	39° 59' 52.174 N	109° 30' 37.76
1,728.00	9.88	186.24	1,710.90	-205.29	-31.46	14,528,721.91	2,057,586.05	39° 59' 52.009 N	109° 30' 37.79
1,822.00	10.06	190.11	1,803.48	-221.39	-33.78	14,528,705.78	2,057,584.00	39° 59' 51.850 N	109° 30' 37.82
1,918.00	10.25	189.11	1,897.98	-238.08	-36.60	14,528,689.04	2,057,581.46	39° 59' 51.685 N	109° 30' 37.85
2,012.00	10.13	185.11	1,990.50	-254.57	-38.66	14,528,672.52	2,057,579.67	39° 59' 51.522 N	109° 30' 37.88
2,107.00	10.50	185.11	2,083.96	-271.51	-40.18	14,528,655.55	2,057,578.44	39° 59' 51,355 N	109° 30' 37.90
2,203.00	10.50	187.36	2,178,36	-288.90	-42.07	14,528,638.14	2,057,576.83	39° 59' 51.183 N	109° 30' 37.92
2,298.00	11.38	193.99	2,271.63	-306.58	-45.45	14,528,620.40	2,057,573.75	39° 59′ 51.008 N	109° 30' 37.97
2,393.00	11.69	194.11	2,364.71	-325.01	-50.06	14,528,601.90	2,057,569.45	39° 59' 50.826 N	109° 30' 38.02
2,491.00	11.35	192.32	2,460.74	-344.06	-54.54	14,528,582.78	2,057,565.29	39° 59' 50.637 N	109° 30' 38.08
	FT MWD SUR					•	, ,		
2,578.00	10.55	189.86	2,546.16	-360.27	-57.73	14,528,566.52	2,057,562.37	39° 59' 50.477 N	109° 30' 38.12
	DI MWD PROI			000.27	-07.70	14,020,000.02	2,007,002.37	39 39 30.477 N	109 30 30.12
				270.02	04.00	44 500 547 50	0.057.550.04	200 501 50 200 11	
2,673.00	12.84	190.13	2,639.18	-379.23	-61.08	14,528,547.50	2,057,559.34	39° 59' 50.290 N	109° 30' 38.17
2,767.00	11.78	187.05	2,731.02	-399.04	-64.09	14,528,527.65	2,057,556.66	39° 59' 50.094 N	109° 30' 38.21
2,861.00	12.40	187.31	2,822.93	-418.57	-66.55	14,528,508.08	2,057,554.52	39° 59′ 49.901 N	109° 30' 38.24
2,956.00	10.20	185.73	2,916.08	-437.06	-68.69	14,528,489.55	2,057,552.69	39° 59' 49.718 N	109° 30' 38.28
3,050.00	9.41	185.47	3,008.71	-452.99	-70.25	14,528,473.60	2,057,551.40	39° 59' 49,561 N	109° 30' 38.28
3,144.00	7.56	182.13	3,101.68	-466.82	-71.22	14,528,459.75	2,057,550.67	39° 59' 49.424 N	109° 30' 38.30
3,239.00	5.98	175.80	3,196.01	-478.00	-71.09	14,528,448.58	2,057,550.98	39° 59' 49.313 N	109° 30' 38.29
3,333.00	4.13	162.18	3,289.65	-486.11	-69.69	14,528,440.49	2,057,552.51	39° 59' 49.233 N	109° 30' 38.28
3,428.00	3.17	132.64	3,384.46	-491.14	-66.71	14,528,435.51	2,057,555.58	39° 59' 49,184 N	109° 30' 38.24
3,522.00	1.83	186.13	3,478.38	-494.40	-64.96	14,528,432.28	2,057,557.38	39° 59' 49.151 N	109° 30' 38.22
3,616.00	2.54	264.26	3,572.33	-496.10	-67.19	14,528,430.55	2,057,555.18	39° 59' 49.135 N	109° 30' 38.24
3,711.00		251.56	3,667.24	-496.93	-71.14	14,528,429.65	2,057,551.25	39° 59′ 49.126 N	109° 30′ 38.30
3,805.00		246.02	3,761.21	-497.74	-73.43	14,528,428.80	2,057,548.97	39° 59′ 49.118 N	109° 30' 38.33
3,899.00		174.94	3,855.20	-498.45	-73.85	14,528,428.09	2,057,548.56	39° 59' 49.111 N	109° 30' 38.33
3,993.00		175.69	3,949.19	-499.96	-73.73	14,528,426.58	2,057,548.71	39° 59' 49,096 N	109° 30' 38.33
4,088.00	0.44	29.02	4,044.19	-500.67	-73.48	14,528,425.88	2,057,548.97	39° 59' 49.089 N	109° 30' 38.33
4,182.00	0.44	37.72	4,138.18	-500.06	-73.08	14,528,426.48	2,057,549.36	39° 59' 49.095 N	109° 30' 38.32
4,276.00		182.13	4,232.18	-500.21	-72.87	14,528,426,34	2,057,549.57	39° 59' 49.094 N	109° 30' 38.32
4,371.00	1.32	188.89	4,327.17	-501.73	-73.06	14,528,424.81	2,057,549.41	39° 59' 49.079 N	109° 30' 38.32
4,465.00	0.88	299.72	4,421.16	-502.45	-73.85	14,528,424.09	2,057,548.63	39° 59' 49.072 N	109° 30' 38.33
4,559.00	0.62	219.30	4,515.15	-502.48	-74.80	14,528,424.04	2,057,547.68	39° 59' 49.072 N	109° 30' 38.34
4,654.00	0,53	185.73	4,610.15	-503.32	-75.17	14,528,423.20	2,057,547.32	39° 59' 49.063 N	109° 30' 38.35
4,748.00	0.70	176.77	4,704.14	-504.32	-75.18	14,528,422.19	2,057,547.33	39° 59′ 49.053 N	109° 30' 38.35
4,842.00	0.79	156.29	4,798.13	-505.49	-74.89	14,528,421.03	2,057,547.64	39° 59' 49.042 N	109° 30' 38.34
4,936.00	1.06	173.34	4,892.12	-506.95	-74.53	14,528,419.58	2,057,548.03	39° 59' 49.027 N	109° 30' 38.34
5,031.00		156.90	4,987.10	-508.76	-74.03	14,528,417.78	2,057,548.56	39° 59' 49.009 N	109° 30' 38.33
5,125.00		174.92	5,081.09	-510.55	-73.55	14,528,415.99	2,057,549.06	39° 59' 48.992 N	109° 30' 38.33
5,219.00			5,175.07	-512.36	-73.38	14,528,414.18	2,057,549.27	39° 59' 48.974 N	109° 30' 38.32
5,314.00			5,270.06	-513.08	-72.91	14,528,413.47	2,057,549.75	39° 59' 48,967 N	109° 30' 38.32
5,408.00			5,364.06	-512.82	-72,35	14,528,413.74	2,057,550.31	39° 59' 48.969 N	109° 30' 38.31
5,502.00			5,458.06	-512.78	-72.15	14,528,413.79	2,057,550.50	39° 59' 48.970 N	109° 30′ 38.31
5,597.00			5,553.06	-512.87	-72.25	14,528,413.70	2,057,550.41	39° 59' 48.969 N	109° 30′ 38.31
5,691.00			5,647.05	-513.92	-71.67	14,528,412.65	2,057,551.00	39° 59' 48.958 N	109° 30' 38.30
5,785.00			5,741.02	-515.74	-70.49	14,528,410.85	2,057,552.21	39° 59' 48.940 N	109° 30' 38.29
5,880.00			5,836.00	-517.61	-69.35	14,528,409.01	2,057,553.38	39° 59′ 48.922 N	109° 30′ 38.27





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design: OH OH Local Co-ordinate Reference:

TVD Reference:

Well NBU 921-35A4CS

GL 4990 & KB 25' @ 5015.00ft (HP 311)

GL 4990 & KB 25' @ 5015.00ft (HP 311)

MD Reference: North Reference:

True

**Survey Calculation Method:** 

Database:

Minimum Curvature EDM5000-RobertS-Local

Survey Vertical Measured Map Map Depth Depth +N/-S +E/-W Northing Easting Inclination Azimuth (ft) (°) (°) (ft) (ft) (ft) (usft) (usft) Latitude Longitude 5,929.97 5.974.00 1.41 159.01 -519.66 -68.32 14,528,406.97 2,057,554.45 39° 59' 48.902 N 109° 30' 38.264 W 6,069.00 1.67 148.38 6.024.94 -521.93 -67.1714,528,404.72 2,057,555.63 39° 59' 48.879 N 109° 30' 38.249 W 6,163.00 0.62 144.07 6,118.92 -523.51 -66.16 14,528,403.16 2.057.556.67 39° 59' 48 864 N 109° 30' 38 236 W 6,257.00 0.70 144.86 6,212.91 -524.39-65.53 14,528,402.29 2,057,557.32 39° 59' 48.855 N 109° 30' 38.228 W -525.32 6.351.00 0.70 143.63 6,306.90 -64.86 14.528.401.37 2.057.558.00 109° 30' 38,219 W 39° 59' 48.846 N 6,446.00 0.97 6,401.89 -526.46 -64.07 14,528,400.24 146.88 2,057,558.80 39° 59' 48.834 N 109° 30' 38.209 W -527.88 6.540.00 6.495.88 -63 08 14.528,398.84 1.14 143 46 2,057,559.82 39° 59' 48.820 N 109° 30' 38.197 W 6.635.00 1.14 143.10 6.590.86 -529.40 -61.95 14,528,397.34 2,057,560.98 39° 59' 48.805 N 109° 30' 38.182 W -530 10 6.729.00 0.18 71.65 6 684 85 -61.2514.528.396.65 2,057,561.69 39° 59' 48.799 N 109° 30' 38.173 W 6,823.00 0.26 101.97 6,778.85 -530.10 -60.90 14,528,396.66 2.057.562.04 39° 59' 48,799 N 109° 30' 38,169 W 6,917.00 0.26 124.21 6.872.85 -530.26 -60.52 14,528,396.50 2,057,562.42 39° 59' 48.797 N 109° 30' 38,164 W 0.53 136.51 6,967.85 -530.70 -60.04 14.528.396.07 7.012.00 2,057,562.91 39° 59' 48 793 N 109° 30' 38.157 W 7,061.84 -531.55 -59.34 7.106.00 0.81 143.16 14.528.395.23 2,057,563.62 39° 59' 48.784 N 109° 30' 38.148 W 7.156.83 -532.59-58.88 7,201,00 0.62173.34 14.528.394.19 2,057,564.10 39° 59' 48.774 N 109° 30' 38.142 W 7,295.00 0.98 172.35 7.250.82 -533.90 -58.7114,528,392.90 2,057,564.29 39° 59' 48.761 N 109° 30' 38.140 W 7,390.00 1.21 173.66 7.345.81 -535.70-58.4914,528,391,10 2,057,564.54 39° 59' 48.743 N 109° 30' 38.138 W 7,484.00 0.03 175 11 7,439,80 -536.71 -58 38 14,528,390.09 2,057,564.67 39° 59' 48.733 N 109° 30' 38.136 W 7,578.00 0.00 171.14 7.533.80 -536.73-58.38 14,528,390.06 2,057,564.67 39° 59' 48.733 N 109° 30' 38.136 W 7,628.80 -536.91 -58.15 14,528.389.89 7.673.00 0.35 126.82 39° 59' 48 731 N 109° 30' 38,133 W 2.057.564.91 7,767.00 0.53 121.39 7,722.80 -537.31 -57.55 14,528.389.51 2,057,565.51 39° 59' 48.727 N 109° 30' 38,125 W 7 862 00 0.30 7 817.80 -537.32 14 528 389 50 331.81 -57 29 2.057.565.77 39° 59' 48 727 N 109° 30' 38.122 W 0.09 250.15 7,911.79 -537.12 -57.47 14,528,389.69 7,956.00 2,057,565.58 39° 59' 48,729 N 109° 30' 38.124 W -537.53-57.58 8.050.00 0.47 184.97 8,005.79 14,528,389.28 2,057,565,49 39° 59' 48,725 N 109° 30' 38.126 W 8,145.00 0.88 194.26 8,100.79 -538.63 -57.79 14,528,388.18 2,057,565.29 39° 59' 48.714 N 109° 30' 38.129 W 8,239.00 1.06 183.62 8, 194.77 -540.20 -58.02 14,528,386.61 2,057,565.09 39° 59' 48.699 N 109° 30' 38.132 W -540.71 14,528,386,09 8.334.00 0 44 356 06 8.289.77 -58.10 2.057.565.01 39° 59' 48 694 N 109° 30' 38.133 W 8,383.77 -539.99 -58.12 14,528,386.81 8,428.00 0.44 1.78 2,057,564,99 39° 59' 48,701 N 109° 30' 38,133 W -539.25 -58.00 0.48 16.00 8.477.76 14.528.387.56 2.057.565.10 39° 59' 48 708 N 8.522.00 109° 30' 38.131 W -538.57 8,616.00 0.53 45.81 8.571.76 -57.58 14,528,388.24 2,057,565.50 39° 59' 48,715 N 109° 30' 38.126 W 8,711.00 0.53 58.11 8.666.76 -538 N3 -56.89 14,528,388,79 2,057,566.18 39° 59' 48,720 N 109° 30' 38.117 W 8,805.00 0.35 32.89 8,760.75 -537.56 -56.36 14,528,389.27 2,057,566.70 39° 59' 48.725 N 109° 30' 38.110 W 8,899.00 0.26 84.62 8,854.75 -537.30 -56.00 14,528,389.54 2,057,567.06 39° 59' 48.727 N 109° 30' 38.105 W 117.88 -537.52 -55.33 14,528,389.33 109° 30' 38.097 W 8.993.00 0.62 8,948,75 2.057.567.73 39° 59' 48.725 N 9,088.00 0.70 147.50 9,043.74 -538.25 -54.57 14,528,388.62 2,057,568.51 39° 59' 48.718 N 109° 30' 38.087 W -539.28 9.182.00 0.94 135.78 9.137.73 -53.7214.528.387.59 2,057,569.37 39° 59' 48.708 N 109° 30' 38.076 W -540.64 9.276.00 1.01 166.92 9,231.72 -53.00 14,528,386,25 2,057,570.12 39° 59' 48.694 N 109° 30' 38.067 W -542.19 14.528.384.70 9.371.00 0.89 172.81 9.326.71 -52.71 2.057,570,43 39° 59' 48.679 N 109° 30' 38.063 W 9,465.00 0.79 153.83 9.420.70 -543.50 -52.34 14,528,383.41 2,057,570.83 39° 59' 48.666 N 109° 30' 38.058 W 9,559.00 1.07 136.65 9.514.69 -544.71 -51.45 14,528,382.20 2,057,571.73 39° 59' 48.654 N 109° 30' 38.047 W 9.567.67 -545.75 -50.58 14.528,381.18 1.85 2.057.572.62 39° 59' 48.644 N 109° 30' 38.036 W 9.612.00 141.61 LAST SDI MWD PRODUCTION SURVEY 9,627.64 -547.26 -49.37 14,528,379.69 2,057,573.85 39° 59' 48.629 N 109° 30' 38.020 W 9,672.00 1.85 141.61

SDI MWD PROJECTION TO TD





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-35A Pad NBU 921-35A4CS

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference: MD Reference:

Well NBU 921-35A4CS GL 4990 & KB 25' @ 5015.00ft (HP 311)

GL 4990 & KB 25' @ 5015.00ft (HP 311)

North Reference: True

**Survey Calculation Method:** Minimum Curvature

Database: EDM5000-RobertS-Local

sign Annotatio	ns					
M	easured	Vertical	Local Cool	rdinates		
	Depth (ft)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
	215.00	215.00	-0.12	0.61	FIRST WFT MWD SURFACE SURVEY	
	2,491.00	2,460.74	-344.06	-54.54	LAST WFT MWD SURFACE SURVEY	
	2,578.00	2,546.16	-360.27	-57.73	FIRST SDI MWD PRODUCTION SURVEY	
	9,612.00	9,567.67	-545.75	-50.58	LAST SDI MWD PRODUCTION SURVEY	
	9,672.00	9,627.64	-547.26	-49,37	SDI MWD PROJECTION TO TD	

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1	Checked By:	Approved By:	Da	te:
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